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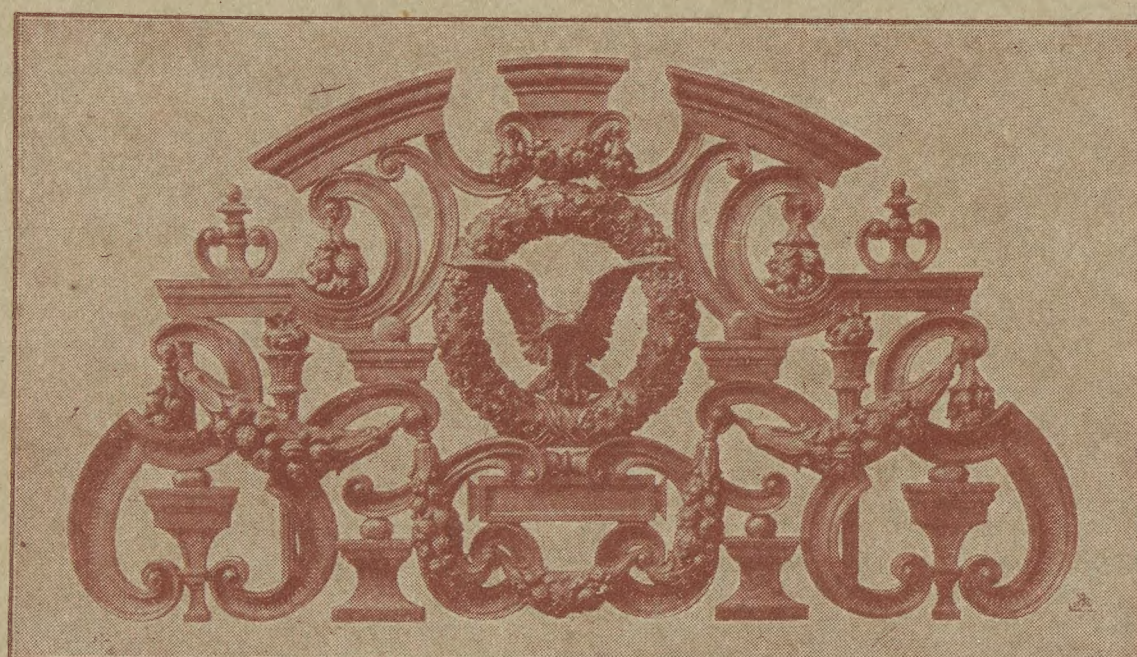
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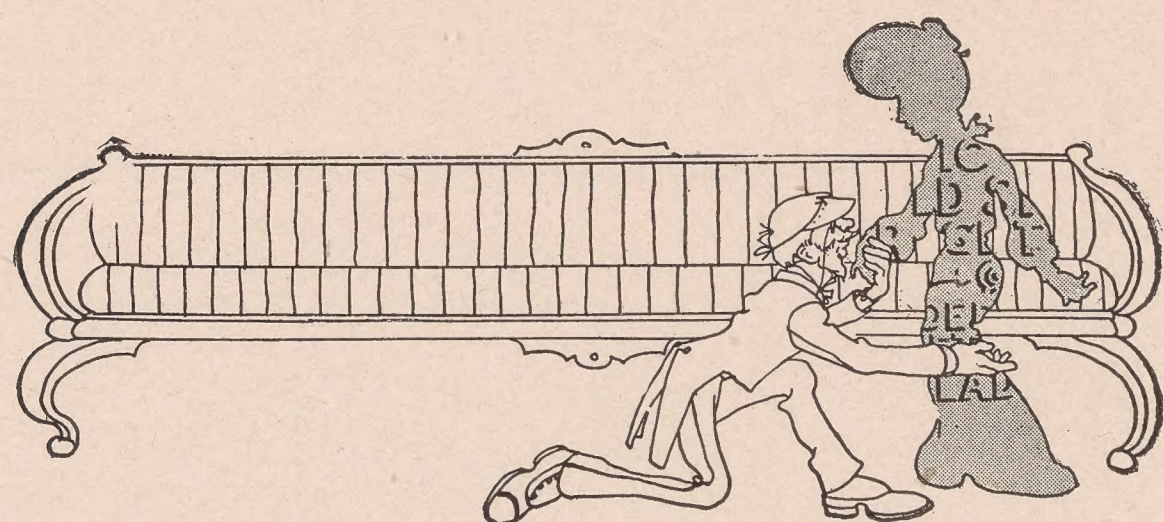
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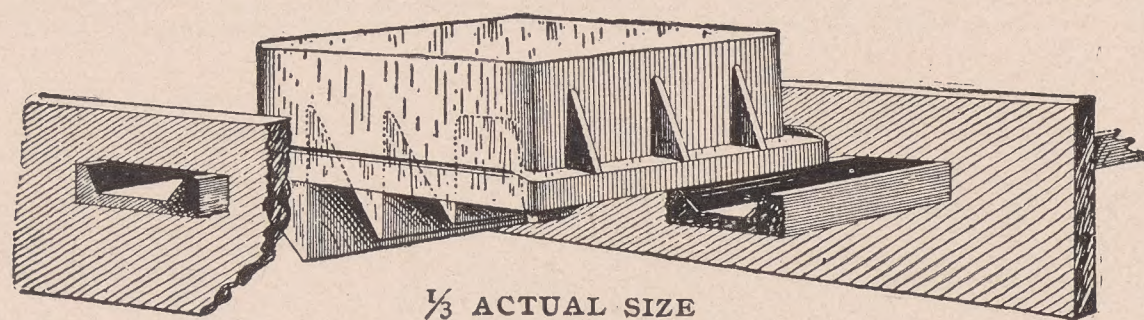
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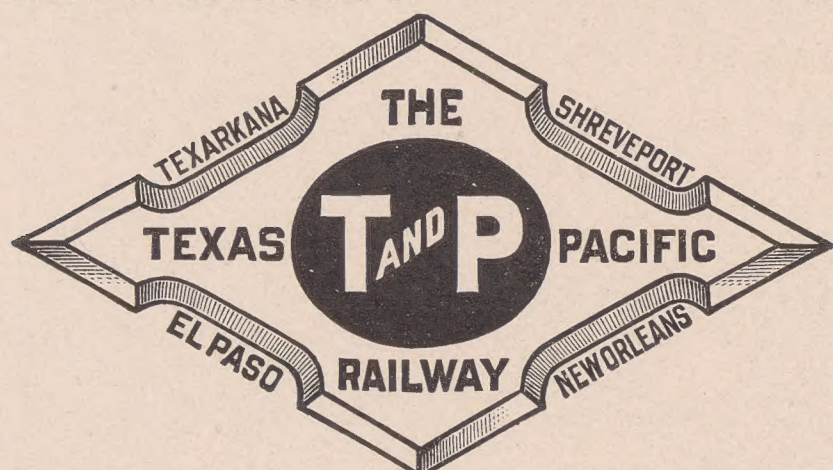
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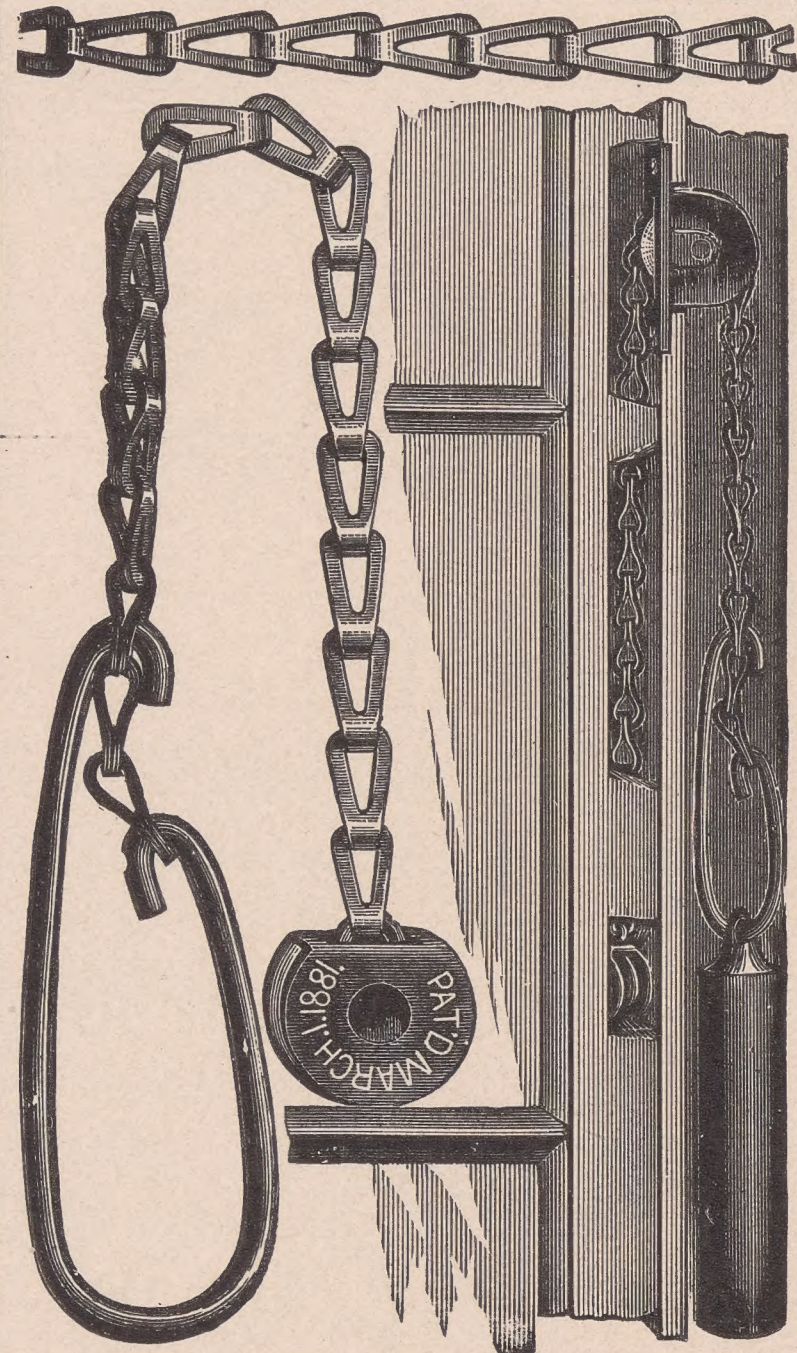
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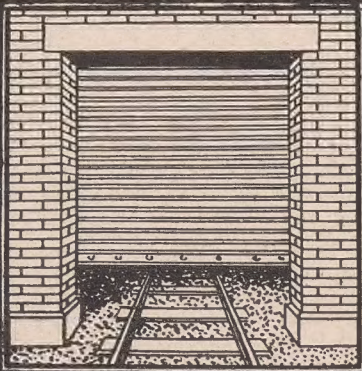
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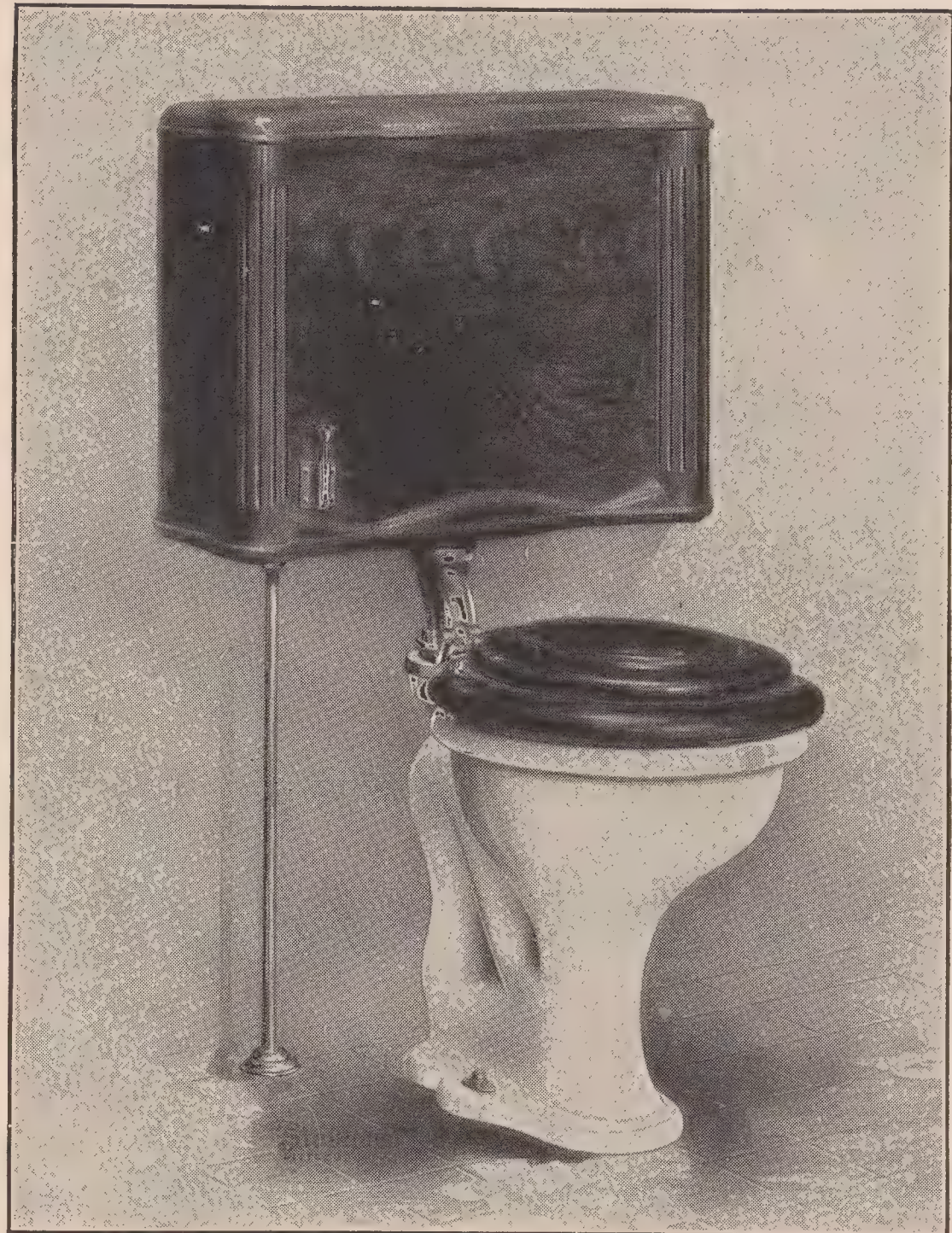
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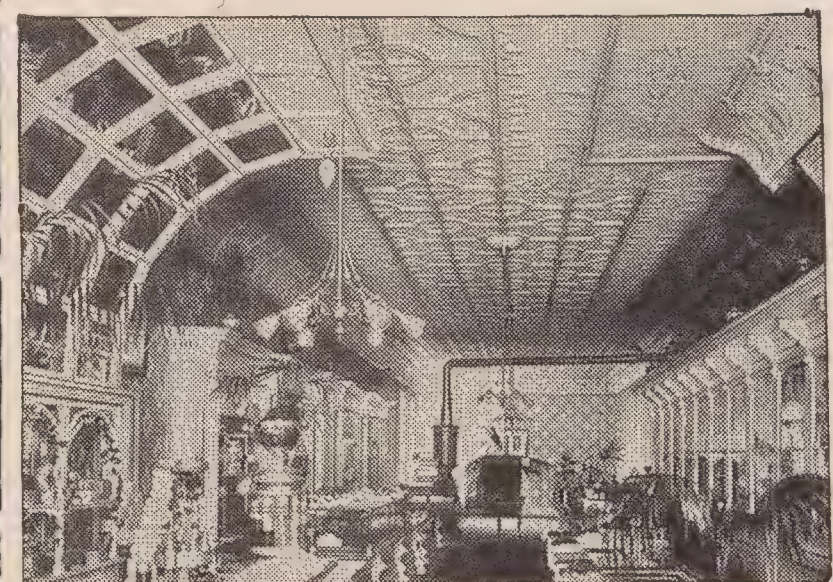
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VOL. XLV.

JUNE, 1905

No. 5



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The limiting of the fire hazard in modern architecture is one of the most important movements of the day. The use of fireproof clay, bricks and tiles for country houses has naturally stimulated the demand for adequate fireproof wood for interior trim. As little wood as possible is placed in such houses, but wood trimmings and decorations will always prove popular. They are no more to be banished for iron and steel or stone and tiles than iron furniture, chairs, tables, and sofas will be substituted for handsome, hand-carved wooden products. But the development of the process of working in fireproofed wood gives an entirely new complexion to the subject. With wood as incapable of receiving and transmitting flame as porcelain and clay tiles it is possible to finish off the interior of our fireproof homes with the handsomest woods known to commerce, and thereby introduce no element of danger. With furniture constructed of similar fireproofed wood, we would have our homes removed from the danger of fire about as far as modern science could think of. Chemically treated fireproof wood must possess cer-

tain fundamental characteristics to make it of widespread general value. Its combustibility must be entirely eliminated so that it will not ignite and carry flame under any conditions of temperature or exposure to fire. This is the first essential step, for with wood that will ignite under certain high temperatures the danger of feeding and spreading a fire at a critical moment might prove fatal. Absolute disintegration of fireproofed wood is impossible. The resistance to disintegration, however, must be extended to the maximum, and this is a matter which receives various attention from those interested in the subject. The maximum resistance to disintegration that can be obtained in chemically treating the wood is a variable factor; but unless the cellular tissues of the wood are completely filled with fire-resisting mineral elements it is not possible for the wood to retain its form and strength for any length of time when exposed to a high temperature. The fireproofing of wood has reached such a development that its use is likely to keep pace with the employment of other fireproof material, especially for interior trim and furniture.

Cook County Court House Competition

Upon the protest of several of the invited competitors, it was hoped that the Board having in charge the securing of plans for the new county court house at Chicago would reconsider the sliding scale of commission and adopt the full 5 per cent called for by the institute schedule, but the Board has affirmed the sliding scale. This has resulted in the withdrawal of at least three of the competitors, and the refusal of the architectural adviser selected to serve. Indicative of a lack of forethought, two errors are noted in the program issued to architects; a slight one in giving the public square as a right angle while it is a decided rhomboid; and a more serious one by which the surrounding streets are given as 66 feet wide instead of 80 feet. Further, the compliance with the city building ordinances demanded would not secure the thorough fireproofing which would appear to be needed in a large public building facing on ordinary commercial streets; and the final plan should provide for the fullest protection against fire. A proper statement of the problem that confronts competitors in this competition comprehends the fact that the square as a whole, surrounded by four streets, is 320 feet by 378 feet in size, which gives 160 feet by 378 feet as the site for the county building. Sketching upon this with the slightest regard to light, the confines of the largest building possible, and it will be found that not more than two-thirds of the space can be inclosed, or roundly 40,000 square feet. Of this area one-half would probably be required for walls, piers, corridors, walks, elevators, stairs, vaults, closets, shafts, etc., which leaves as the available space per floor about 20,000 square feet. The program given demands space aggregating 372,826 square feet, which divided by 20,000 gives nineteen stories required for the building. If the statements furnished as real demands are correct the competitors have an interesting problem to solve.

CHICAGO.

BY F. W. FITZPATRICK.

A FEW days ago I happened to be present when an architect of some eminence, a New Yorker, was descanting upon the beauties and advantages of New York, and incidentally disparagingly referring to Chicago as being absolutely void of any artistic charm, essentially a "city of pig-stickers." I quote him verbatim merely to show that an elegant choice of expression comes naturally to even eminent architects in New York. Knowing something about Chicago I took occasion to make such defense of that great city and its love and appreciation of art as was possible under the conditions of awe I invariably feel when in the presence of anything from New York, particularly one of its "eminent" ones. But the slur upon Chicago leaves a certain rankling still within me. It is so commonly heard. Chicago is almost always referred to, by people who do not know, in some such way. To eastern people and to Europeans it is synonymous with business, pork-packing, wind, snap, and things strictly material. Now, as a matter of fact, Chicago has done more for art in this country than has any other city. Eliminating everything else and banking upon that one thing, its exposition of 1893 would give it architectural and artistic preëminence. Nothing has been done since that time in Europe, or here, even at St. Louis, that would in any way equal that splendid, novel and original effort. And the influence of that effort was not a passing one, it was most lasting. The decided pulling away from all the degrees and brands of Romanesque and the various crazes rampant at the time began with that exposition, and it also gave prototypes to our architects, splendid examples of well proportioned and dignified classic buildings, upon which they have drawn ever since, an influence that has been as potent in New York as elsewhere throughout the country.

Chicago was not only the first city to erect tall buildings, buildings that the commercial exigencies of the whole nation demanded, but was the first to make them artistic, and is the only city today whose tall buildings are respectable from an artistic point of view. In New York one type has served as a model for all that city's architecture. As soon as one of the profession secures a commission for a tall building he sets himself to work designing a wonderfully ornate Greek temple cocked up on a basement of sixteen or seventeen stories, and that in turn resting upon a supposed plinth of a couple or more stories wonderfully tortured with ornament. Up and down Broadway, and crosswise, do you get that same thing, it stares you in the face at every turn. In Chicago the architects when confronted with a tall building proposition accepted it as a new form, and something for which there was no existing precedent, and proceeded to build their structures of few architectural features, of simple lines and dignified masses. In the most part good square fronts pierced with unlabored fenestration.

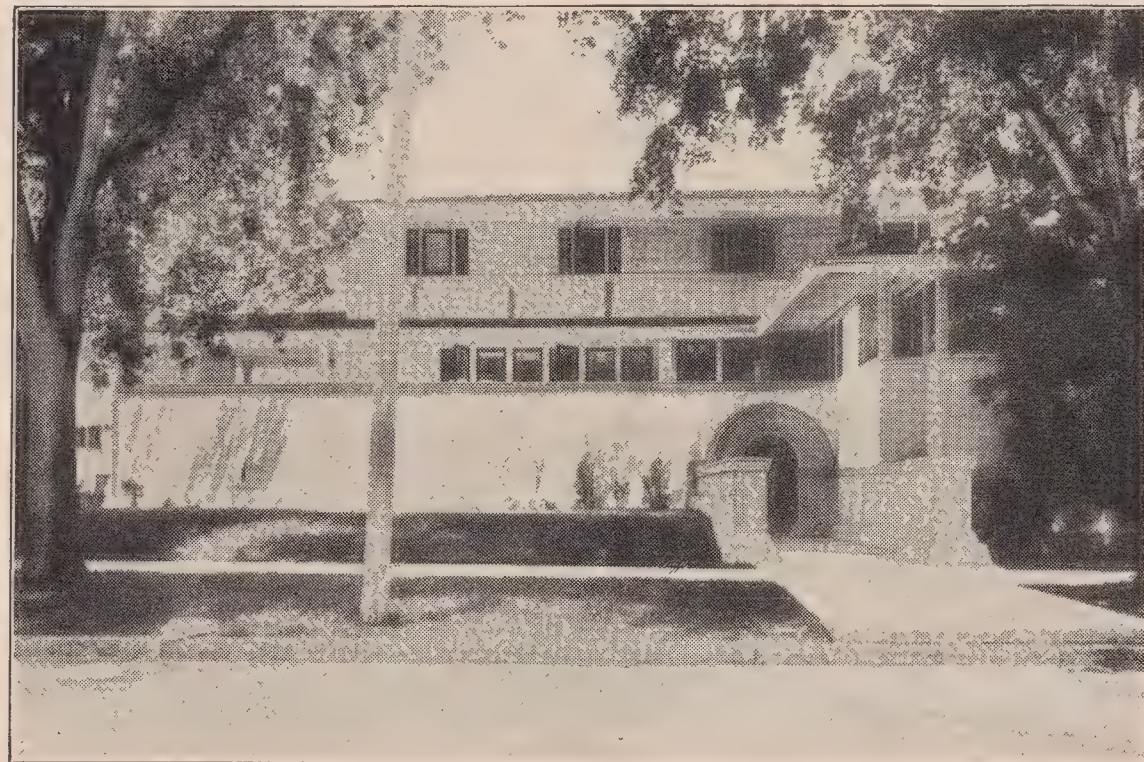
Take the First National Bank of Chicago, for instance. I look upon that building as the best tall building that has been erected in this country.

Its material, granite, stamps it as important, a structure that was not skimmed or upon which extraordinary economies had to be practiced. Its mass is good and the almost total absence of detail and ornamentation enhances its value a thousand fold over the becolumned, be capped and becorniced affairs of which our New York brethren are so proud.

The home building in Chicago has been carried to a more artistic point than anywhere else in the country. Though occasion was undoubtedly present there is far

less display of mere wealth in Chicago than there is in New York, and far more really enjoyable, artistic, livable sort of houses pro rata of population than one can find anywhere in the world.

The Art Institute of Chicago has more earnest seekers for truth in art, and a greater number of hard-working, enthusiastic and well trained students than has any other art school anywhere in the world. I believe I am safe in saying, too, that its people, "pig stickers" though many of them be, have a keener appreciation for and know more about art generally, and are



RESIDENCE, OAK PARK, ILL.
FRANK L. WRIGHT, ARCHITECT.

more interested in and do more to help art and artists and the progress of the country at large in matters artistic than any other community between the Atlantic and the Pacific.

More than that, and as far as architecture goes, Chicago has even created a new school, virtually a new style, "un nouveau art," which antedates the movement in the same direction about which so much is heard in Paris and among our German friends. Louis Sullivan was the first man—in Chicago or anywhere else—who boldly cast off the thrall of precedent, and treated the new condition of structure in a frank and artistic manner. He realized the fallacy, the unreasonableness of masking a steel frame of the lightest members with a false exterior of massive granite columns and great lintels and pedimented windows and what-not, columns and piers that instead of carrying any loads or part of the structure as they purported to do, were actually carried by and sometimes suspended from the steel frame. He set about to take the structure as the new conditions made it necessary or desirable that it should be, and decorated it, making the outer shell merely a protection, avowedly an epidermis for the framework which people knew was there, but that his confreres always tried to hide.

Sullivan's mode of decoration and his handling of purely decorative forms is masterly in the extreme, and some of his work is really superb. There is a touch of daintiness of exquisite delicacy that makes his work most attractive. Others, and younger men have followed in his wake. Wright, Maher, Long, Drummond, Shaw, Schmidt, and a dozen others, most of them in Chicago, and, if I am not mistaken, many of them pupils of Sullivan, have given us much of daintiness, absolutely new, particularly in domestic architecture, of which we may well be proud.

Of course, as in all things new, one occasionally sees a streak of craziness, which after all is but another indication of genius. Some of these men have designed things that were surely novel, and possibly exquisite and dainty in their parts, but nevertheless belonged body and soul to the genus freak. Men creating or following a brand new school are prone to do that sort of thing. They are carried away with it, become sort of monomaniacs and would sacrifice anything to obtain the one point of novelty. Take, for instance, in the nouveau art craze, either French or German, the essence of the thing is correct, and sane, it is the making of buildings or furniture first and foremost purely utilitarian, eschewing anything that may savor, however remotely, of making that thing whatever its use follow some certain style or precedent. Then they take those utilitarian forms and decorate them, but there is where they run riot. Seemingly there must never be anything done which has ever



FIRST NATIONAL BANK.



INTERIOR VIEW



RESIDENCE OF MRS. FRED MAIER, LOS ANGELES, CAL.
JOHN P. KREMPEL, ARCHITECT



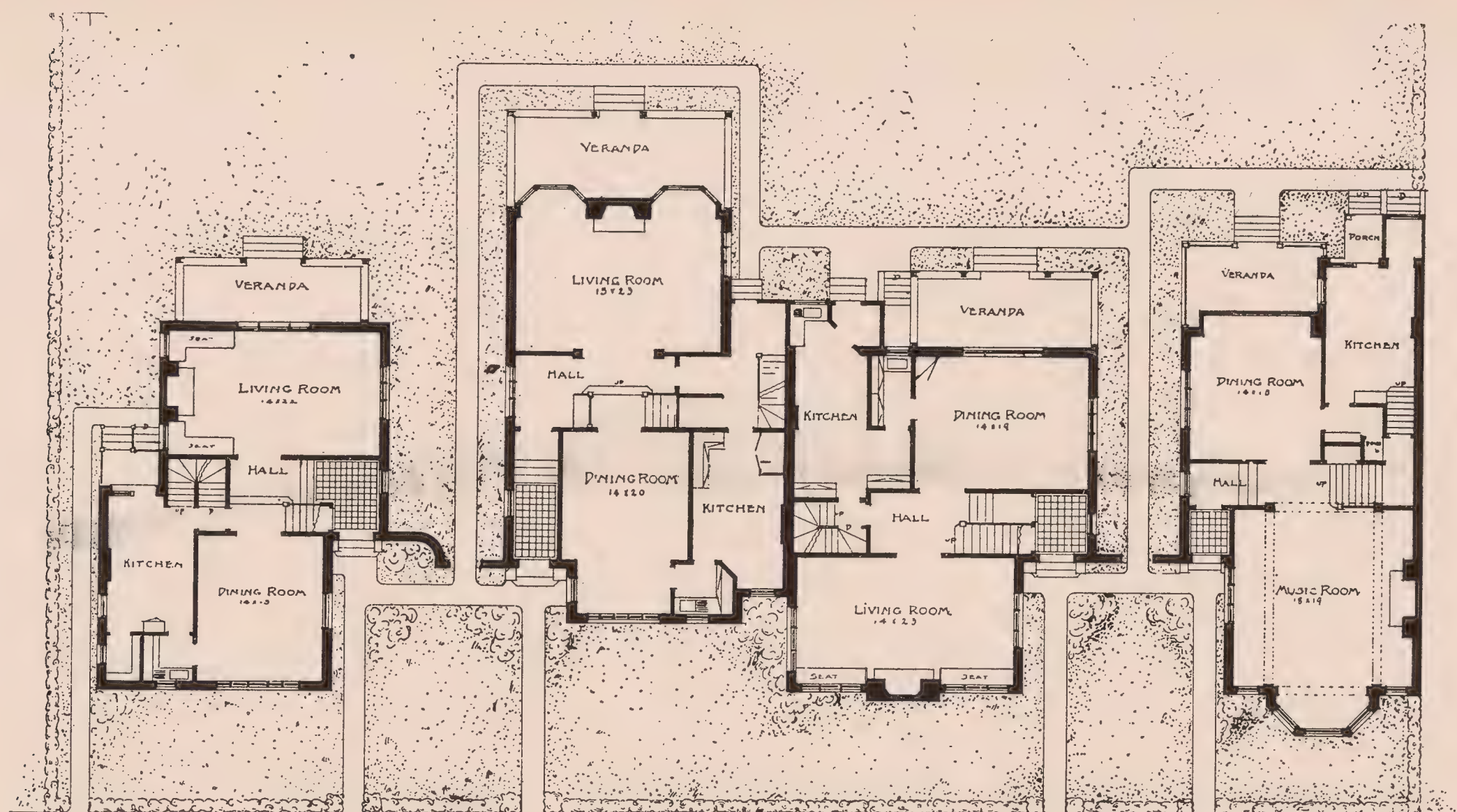
EL DETORA APARTMENT BUILDING, KANSAS CITY, MO.
ALBERT TURNEY, ARCHITECT



WENDELL PHILLIPS HIGH SCHOOL, CHICAGO
WM. B. MUNDIE, ARCHITECT



VIEW IN SECURITY SAVINGS BANK, H. W. HELLMAN BUILDING, LOS ANGELES, CAL.
A. F. ROSENHEIM, ARCHITECT



GROUP OF RESIDENCES FOR PROFESSORS OF UNIVERSITY OF CHICAGO, CHICAGO
MANN, MACNEILLE & LINDBERG, ARCHITECTS, NEW YORK AND CHICAGO



TOWARDS SUPREME COURT ENTRANCE



VIEW IN MAIN ENTRANCE

NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT



KIRKLAND B. ARMOUR MEMORIAL CHAPEL, ELMWOOD CEMETERY, KANSAS CITY, MO.
MARSHALL & FOX, ARCHITECTS, CHICAGO



SENATE RETIRING ROOM



HOUSE RETIRING ROOM
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT





VIEW IN SUPREME COURT ROOM



DETAIL OF COLUMNS IN ROTUNDA



VIEW OF GRAND STAIRWAY

NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT



MAIN FRONT
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT



GENERAL REAR VIEW
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT



CENTRAL DETAIL, MAIN FRONT
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT



DETAIL VIEW ABOVE MAIN ENTRANCE
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT



VIEW ACROSS ROTUNDA. SECOND FLOOR TOWARDS SENATE CHAMBER
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT



VIEW IN SENATE CHAMBER
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT



VIEW IN THE GOVERNOR'S RECEPTION ROOM
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT

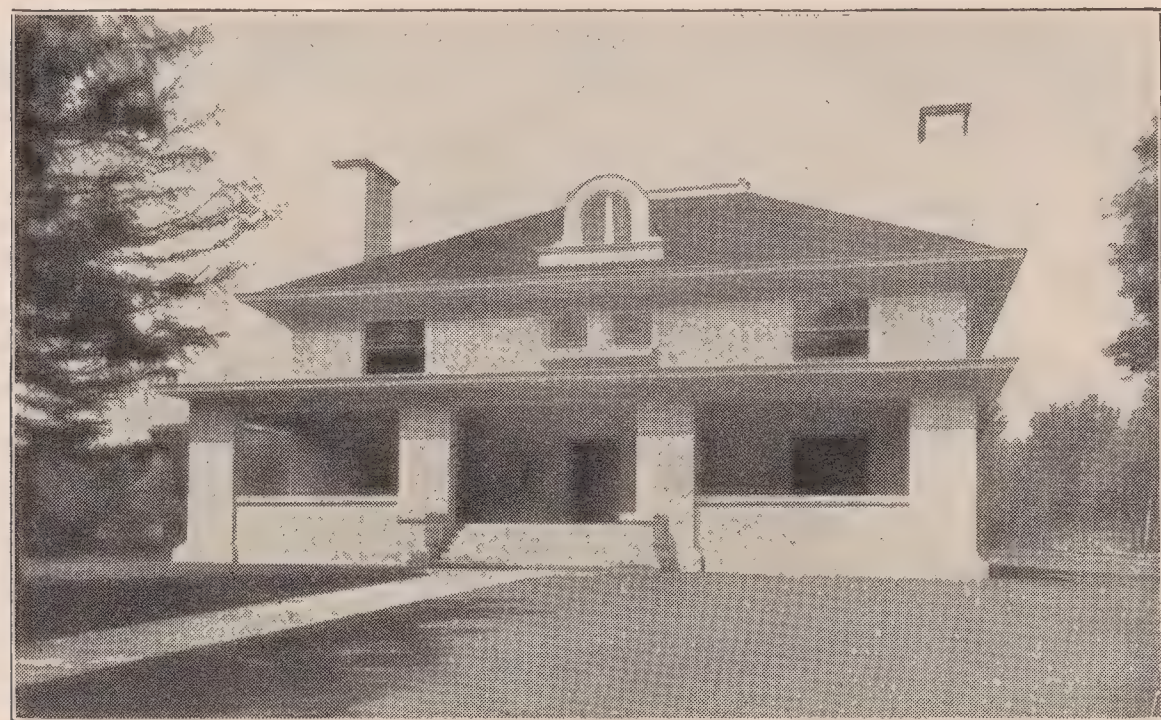


THE HOUSE IN SESSION
NEW MINNESOTA CAPITOL BUILDING, ST. PAUL
CASS GILBERT, ARCHITECT

been done or even suggested before, and in the search for novelty surely some wondrous, monstrous things are perpetrated. One shudders when looking at much of this new stuff, and involuntarily thinks of absinthe, cigarettes and morphine. Basically the movement is perfectly legitimate and by and by its votaries will become better balanced. Like in everything else, a revolution in any set form is at first anarchistic, and seeks to overthrow *everything*, the good with the bad, but time moderates the tempestuousness of sentiment and the riotousness of blood, and things quiet down under the new form and assume normal, sane, healthy though new shapes. So, with our Chicago school. Our artistic friends there are gradually getting their genius better bridled and well in hand, and even today, comparatively new as it is, there is not that desire to contort and distort rather than do anything at all like what may have been done by the other fellow.

Much of what was done in the earlier time of this new style was, to say the least, amusing. One summer I spent some little while in Oak Park, Chicago, and daily passed the Rogers residence by Mr. Wright. The neighbors called it "The Harem," and it does have a sort of seraglioic appearance, quite Oriental, in its high encompassing blank walls, but is ridiculously small in its parts. That sort of thing is simply exotic. His later work is far saner and loses nothing in its artistic daintiness.

Mr. Maher's work is exceedingly interesting. Much of it is really beautiful in its straightforwardness of purpose and true appreciation of artistic possibilities in decorating purely constructive features. The house of Mr. Coffeen here illustrated shows his general scheme of design. His sin in the earlier times



RESIDENCE FOR WM. COFFEEN, HINSDALE, ILL.
GEO W. MAHER, ARCHITECT, CHICAGO.

was an exaggeration of scale, a use of cyclopean stone-work that simply dwarfed everything he did. But he, too, has sobered down.

What a peculiar thing, and how unstable genius really is! Speaking of the new school I am thinking of Mr. Sullivan. His decorative work is certainly always beautiful, but when he gets into designing entities I know of no man who has more up and downs. Perhaps they are more noticeable in him because we expected great things from him all the time. For instance, in the Auditorium the massing of the whole is good, and every part is good, and the decoration, external and interior, is fine. The same may be said of the Schiller Theater—but in much of his other work his handling of masses is apparently unstudied.

What an ideal condition it would be if our principal work could be designed by a corps of such brilliant specialists with some one o'erstepping genius to direct their efforts in unison and harmony! And yet, put into practice that idea does not work perfectly, either, so we are forced to the conclusion that perfection will not obtain here below. Possibly hereafter in some beatific or seraphic state we may have heavenly buildings ideally designed. But as an illustration that the piecemeal system is not always eminently satisfactory we have the Burnham office. It turns out, undoubtedly, the most important work and more of it than any other office in the world. The profits are large enough to warrant the employment of the highest talent obtainable with money and I understand that the work is cut up among specialists, yet much of the product is most deucedly unsatisfying. The Burnham buildings are generally well planned,

commercial successes, built expeditiously and within the limit of appropriation, in every way but the artistic achievements of high order. And as far as the artistic goes some of them are fine. The First National Bank, before mentioned, as the artistic solution of a commercial problem, stands well at the head of anything done by that office or any other office; but in so very many cases the Burnham designers have fallen flat indeed.



HYDE PARK-CHICAGO TELEPHONE CO.
C. G. HELICK, ARCHITECT.

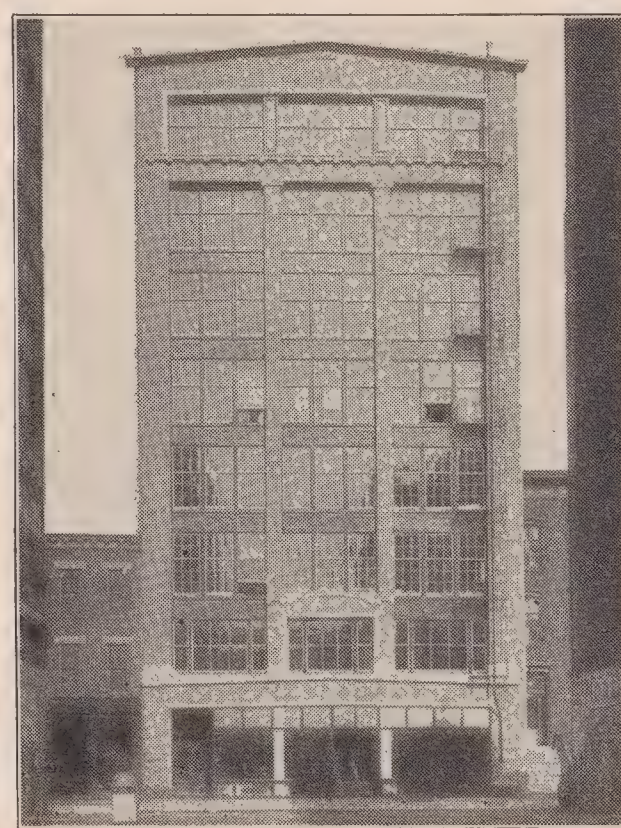


GAS, ELECTRIC AND TRACTION CO.
TRENTON, N. J.
W. M. POLAND, ARCHITECT.

One thing I can say for their buildings, however, is that they are never offensively ugly, which can not be said of a great many of their contemporaries.

* * *

A professor of architecture at one of our schools berated me soundly the other day for my mode of criticism, stating that I was not justified in saying that this or that offended good taste because it might only be my personal taste that was offended in such cases, that there were no cardinal principles or canons of good taste, that it was all personal, individual, et cetera, et cetera, an argument I never expected to hear from one who had given some attention to architecture, for in no science or art are there as well recognized canons or foundations upon which to base criticisms as there are in ours. Not merely rules to be observed in handling certain styles, but general principles wherein adaptability, grace, and an hundred considerations play important parts, and to know which is an essential to our education as architects as are the basic rules of good construction. It is *not* a matter of personal taste. Take for illustration these two buildings, for exactly similar purposes, offices of public utility companies, one a gas company office, and the other a telephone exchange. The telephone exchange is at Chicago, in



HENNEBERRY BUILDING, CHICAGO.
HOWARD V. SHAW, ARCHITECT.



STORE BUILDING, BUFFALO NEW YORK
E. A. KENT, ARCHITECT

Hyde Park, a little two-story affair of simple lines, yet with some ornamentation and character to it, eminently adapted to its purpose, and could never be mistaken for anything else; the other, a gas building at Trenton, N. J., substantially the same size, yet overplastered with decoration, beautifully columned with overgrown composite affairs; meaningless and costly. Can there be any question of personal taste in approving of

the one and setting the other aside as a work of very secondary degree?

Another illustration; two store buildings, one, the eight-story affair in Chicago and the other a store of like order in Buffalo. The Chicago one is plain, yet with good lines, a building that must be well lighted within, of considerable severity, yet pleasing withal, essentially a store building and one can have no adverse comment to make upon it; the other, as in the previous case, is overloaded with ornament, virtually three kinds of buildings, superimposed one upon the other, without any connecting links, independent units. The man simply had to have temple-like columnation, and was not thoughtful enough to handle a foundation for his columns, hence they stand upon nothing with two little metal affairs at the first story supporting the voids above. Does one open himself to arraignment as a false critic who commends the one and condemns the other? Personal taste? Nonsense!

Our architects, as a body and without reference to individual cases, sadly open themselves to this sort of criticism for the simple reason—whether it is that they are so very busy or that they lack the training, or natural skill—that they seem to design unthinkingly. They take some motif or other and work it to death in school and out of school. If they get the Greek temple idea, for instance, they will run it into every blessed church, residence, stable or store they happen to design. They seem to lack versatility and the proper appreciation of each separate opportunity. You ask, what is the cure? One's first thought is "better education, better training," but there again are we confronted with difficulties. Better education in our accepted term generally means a sojourn at the Beaux Arts. The youngster returns from his three or four years there, inflated with all sorts of freaky notions. He has worked on magnificent "projects," palaces for reigning families, great terminal stations for the associated railways of the world and other such intensely practical and probable problems. He is disgusted with the small stuff he has to work on here at first, feels that he is not properly appreciated, gets down on his luck, the people and the country, and sometimes becomes a long-eared dyspeptic without a job. What can be the cure for the existing evil that we recognize and deplore? I give it up. It must be that architects, like poets, are born, not made.

FIREPROOFED WOOD FOR ARCHITECTURAL USE.

BY GEORGE ETHELBERT WALSH.

THE fireproofing of timber so that it will resist flames and not ignite under any high temperature has been a problem of particular interest to architects, who, unwilling to discard wood entirely for steel and fireproof tiles and bricks, have still realized the necessity of eliminating the fire hazard so far as possible. Fireproof wood, however, must possess the virtue of retaining its natural color and grain in order to satisfy the needs of modern interior homes, and where this is sacrificed in the interests of greater security the results have not been satisfactory nor popular. The whole process of fireproofing wood is to change completely its character, replacing the natural organic material in the fiber with chemicals that will not burn. To do this without injuring the surface is a feature of the work that requires a good deal of trouble and expense.

Fireproofed wood proves both incombustible and impervious to ordinary decay. Ordinary germs of decay found in the atmosphere which lodge in the pores and tissues of wood are practically rendered inoperative when brought in contact with wood treated with modern fireproofing chemicals. Consequently the wood is germ-proof. Even when not treated to a surface coat of paint or varnish there is no chance of decay through ordinary atmospheric changes.

The most difficult part of fireproofing wood has been the treatment of the fiber with chemicals which would not only prevent flame from spreading, but at the same time enable the wood to resist charring effects under high temperatures. Wood may be made non-combustible, but in high temperatures easily char and disintegrate. Supporting timbers and joists would thus lose their strength and cause the collapse of a building.

A good deal of the fireproof wood in use is only for interior

trim and decoration, employed chiefly in fireproof buildings to finish off the harsher outlines of brick, terra cotta and iron. To make the building absolutely fireproof, ordinary wood must be entirely eliminated or replaced by chemically treated lumber. The wood is not employed in any way to carry loads, and consequently its charring and complete disintegration causes no real trouble. So long as it refuses to support or carry flame it accomplishes its end.

To this extent at least so-called fireproof wood has achieved a notable success. It is only when the wood is employed for structural purposes, with loads of varying weight carried on it that are vital to the rigidity and firmness of the building, that the question of charring and disintegrating becomes of prime importance. To expect that fireproofed beams and studding will withstand the excessive temperatures of a hot fire and not crumble under their loads is to demand much.

Fireproofed wood undergoes chemical changes in the process that completely alters its ordinary characteristics. Its most important change is in its density and specific gravity. The cells of the tissue can not be filled with chemicals without greatly increasing its weight. Thus a common piece of pine weighing when dry and untreated about thirty ounces to the square foot, will, when saturated with chemicals, weigh nearly or quite ninety-seven ounces. The increase of over three times its original weight holds true with most light, porous woods. The difference in the cellular structure of the woods leaves room for some variation, and the closer and finer the texture the less will the weight increase with saturation. The amount of chemical solution, however, that a piece of wood can absorb is often an indication of its fireproof possibilities. It is for this reason that soft, porous pine can often be rendered more incombustible than hard walnut, ash or oak.

The amount of saturation with sulphate of aluminum for fireproofing purposes has been placed at 120 per cent for ordinary white pine; 100 per cent for yellow pine; 80 per cent for maple; 120 per cent for poplar; 90 per cent for ash; 70 per cent for red oak; 70 per cent for birch; and 30 per cent for white oak. Other woods have similar variations in the amount of available space for holding the infusible and nonconductive protective chemicals.

Sulphate of aluminum expands in the wood when the surface is heated to something like three times its original volume, and thus the porous cells are completely filled so that fire and gases have no lodgment in them. Sulphate of ammonia has no such effect, and the saturation of the woods is much higher and their weight is correspondingly greater. Sulphate of aluminum is both lighter in weight and more expansive under heat, and being equally irreducible and non-conducting it performs its purpose equally well.

Many different chemicals have been employed in fireproofing wood. Some of these destroyed the color of the woods, and others made them so brittle that their use was very limited. Where weight was an important question in the use of the woods, the nature of the preserving chemicals was very important. Sulphate of ammonia, for instance, would increase the weight to such an extent that the wood was not recommended by the Navy Department for use on war vessels. Weight is a consideration in shipbuilding, and it has been exhaustively studied by the marine architects. Nearly all of the chemical agents have had a marked tendency to destroy the fresh color of such raw woods as oaks, chestnuts and redwoods. The tannic acid in the woods would unite with the chemical agents introduced, and the surface would gradually show discoloration and injury. The use of correctives for this in the past few years has promised better results, and fireproofed wood can today be made that shows no material change in color from the original. The woods emerge from the bath with as perfect coloring and natural tinting as when first put in. Such discolorization of the natural woods is as marked in sulphate of aluminum baths as any other, and unless proper correctives are used the wood is permanently injured in surface appearance.

A third important point in fireproofing timber is the necessity of treating the wood so that there shall be absolute permanence of the material injected into it. In the early history of fireproofing wood the immunity from fire would last only for a short time. By evaporation or other loss, the preservative chem-

icals would disappear or their resisting virtues decline. There was no sense of security obtained in the treatment of the wood after five or six years of use. Today chemical science has advanced to such a point that it is easily possible to secure permanence in this respect. Wood that has been treated can be depended upon not to lose its fireproofed qualities for decades. In some cases such wood is believed to be as durable and permanent as the concrete and masonry on which it may rest.

The necessity of preserving the natural color of the wood has already been emphasized. This is one of the most doubtful factors in many of the processes of today. Frequently a chemical change slowly goes on, and wood that shows no discoloration immediately after treatment loses in time its rich, natural appearance. However, permanent perpetuation of the natural colors of the wood is possible, and fireproofed wood that has been in use for upward of ten and fifteen years is as natural in color and markings as fresh wood cut and polished today.

A point that touches upon the question of the disintegration of the wood is that some chemicals destroy rather than preserve wood. Tissue and wood fiber are eaten up and the strength of the timber thereby weakened. In the best chemicals used for this purpose the wood fiber is not destroyed, but simply preserved. The chemicals fill the pores and cells, but do not eat the wood fibers to take their place. Whenever the latter is done, the strength of the timber is materially weakened.

The chemical treatment must secure a dry surface when finished. If a moist surface is left it destroys the effects of varnish and oil treatment. This tendency for the surface to moisten is not always thoroughly appreciated. It is impossible to secure good architectural results where it is present. Perfect dryness of the surface under all conditions of climate is a prime essential of fireproofed wood that is to be used for interior decoration.

THE NEW MINNESOTA CAPITOL BUILDING.

THE pictorial pages of this number present many views, exterior and interior, of the new State Capitol building of Minnesota, Cass Gilbert, architect. The location is commanding and the terraces and approaches when completed will add much to the adornment of the building. The terraces of granite will be beautified with shrubs and flowers. The Italian renaissance is the dominant note in the design. The dome of white marble is very satisfactory in proportions. In plan the building is an oblong with a central wing at the north. The following are the dimensions of the building:

	Feet.
Length, exclusive of entrance steps.....	433
Width, average of main part.....	120
Width of central part, exclusive of steps.....	228
Greatest height	220
Height of outside walls, average above ground..	69
Depth of outside walls, average below ground..	14
Cubical contents, 5,060,955.	

July 27, 1898, was the date of the laying of the corner stone. The steps, terraces and ground story are of St. Cloud granite, and the upper stories and dome are of Georgia marble. Few masonry domes are as large, and it is thought that no dome in the world constructed of marble rivals this in size. The lantern of the dome rests upon a cone of steel and masonry. The dome itself is self-supporting. Every effort has been made to have the building representative of the materials of the State. Some of these show marked adaptability for the purpose, notably polished Kasota and Mankato stone for interior finish. The color of this stone has been used as the basis for the mural decorations throughout the building. Columns of granite and marble judiciously arranged add beauty and massiveness to the interior. In the stair halls are columns of the Italian Breche Violette marble; there are balustrades of marble from the Greek archipelago; and the marble in the senate chamber is the beautiful Fleur de Peche from France. The bases of marble columns and the lower section of marble at floors in the upper stories are Hauteville marble imported from France. It is used in these places for the reason that its color is in harmony with the Mankato and Kasota stone and it is almost impervious to moisture and is not easily soiled. The marble columns used in the House

of Representatives and Supreme Court are from quarries in Vermont. The square panels just under main cornice in the rotunda are of marble from Siena. The borders of stone floors and the steps in vestibules of first story are of Tennessee marble. Joliet stone is used for the main portion of floors. The trim around doors opening on corridors and dome is of Eschailon marble. Numidian marble is used for the mantels in the retiring rooms of the Senate and House and for paneling of the floors. The use of marble for the floors gives a monumental effect and harmonizes well with the walls. Oak simply treated is largely used throughout. Where an elaborate effect was desired mahogany was used. In plan, the legislative chambers with committee rooms are in the second story, the Senate is in the west wing, the House in the north and the Supreme Court in the east wing. The rooms for the governor are in the southwest part of the west wing in the first story.

Figures typical of Wisdom, Courage, Bounty, Truth, Integrity and Prudence by Daniel Chester French surmount the main cornice of the south entrance. A Quadriga in bronze, typical of the Progress of Minnesota, also by French, will be placed above the attic of this entrance. The central lighting fixture in the rotunda is a cut glass ball six feet in diameter containing eighty electric lamps.

The purpose has been to make the mural decoration an integral part of the architectural design. Full consideration was given to color, texture and markings in all materials used as interior finish, and to the architectural lines. This has been intelligently supplemented by the work of the painter. Above the windows at the base of the dome are twelve lunettes bearing the signs of the zodiac. The four spandrels of the rotunda have paintings by Edward E. Simmons. Paintings by Kenyon Cox and H. O. Walker fill the large lunettes at the end of the staircase vaultings. Other lunettes have figure paintings illustrating the industries of the State and views of pioneer scenes and buildings.

In the House of Representatives the decoration aims to express in color the architectural divisions. Ornamentation on a field of gold covers the band below the skylight and pendentives beneath. The modeled ornament throughout the room is in dull gold and the wall panels in dull red.

The Senate chamber dome is in ivory and dull gold. On the side walls two large lunettes contain the decorations by Mr. Blashfield. Over the piers carrying the dome are compositions illustrating Courage, Equality, Justice and Freedom. The panel behind the president's desk is decorated with a pattern of gold on a field of blue.

In the Supreme Court room the dome is in gray with dull gold ornament. The four lunettes have paintings by John La Farge. The ceiling and cornice in the governor's reception room are gilded and in the cove gray, blue and green are used. The ornamentation and carving of the woodwork is in dull gold with touches of color. An important feature of the decoration of the building is The Treaty of the Traverse des Sioux, July, 1851, by F. D. Millet.

The pictures in our illustration pages which illustrate the building in a very satisfactory manner, are selections from the views which illustrate the book, "The Capitol of Minnesota," just published by the Finance Company, of St. Paul, Minn.

The Minnesota Capitol Building has been constructed without the scandal that is too often the accompaniment of buildings erected from public funds. Among all those connected with the construction there has been maintained throughout an *esprit de corps* that has produced a notable achievement in architecture adorned with the work of artists of high rank.

The admirable paper on "The Grouping of Public Buildings," which was published in the May number of this journal, was prepared by Frederick S. Lamb, New York City. It was read by the author before the annual convention of the Architectural League of America at Pittsburg, April 17, 1905.

JOHN EISENMAUN, architect of Cleveland, has received a gift of \$10,000 from the city in recognition of his work of formulating a new building code.

GODFREY FUGMAN, of Cleveland, Ohio, has formed a co-partnership with Harry A. Cone as associate.

FOUNDATIONS FOR LARGE BUILDINGS (Concluded.)

BY JAMES N. HATCH, C. E.

ANOTHER great advantage in this style of foundation is its permanence. There is very little danger to be feared from excavations on adjoining lots or from the placing of other heavy buildings close by. Another matter that will have to be considered in the future is the likelihood of subways beneath the streets, and in fact the present tunnels are already opening up some grave problems. With the present tunnel system carrying freight, it will be desirable to run side tunnels beneath the various buildings for delivering and sending out goods of all kinds. When the building under consideration has grillage foundations it will always be somewhat hazardous to go beneath these footings with an excavation.

There is already a scheme under consideration in one of the Chicago large buildings to place a power plant so far beneath the building that the coal coming in on the tunnel cars can be dumped directly into the bunkers. In other words the top of the power house will be below the present level of the tunnels. If such a building is on concrete piers no anxiety need be felt regarding its safety, but if the foundation is of the grillage type there may be some interesting developments.

The concrete pier type of foundation is expensive, but a small percentage of additional cost is certainly justifiable in a building that is to cost in the neighborhood of a million dollars. The first tall office building in Chicago placed on concrete piers, if the writer has been correctly informed, was the building of the Methodist Book concern on Washington Street near State. They doubtless believed in following the Bible precept, against that day when the winds should blow and the floods should come and beat upon that house; and in order that it should fall not, they built it upon the rock.

The new Marshall Field retail building, one of the tallest buildings in Chicago, has concrete piers carried down about eighty-five feet to hard-pan. The Railway Exchange building, erected recently on Jackson Boulevard and Michigan Avenue, has a similar foundation. This is seventeen stories high and extends from Michigan Avenue back to the alley.

The new Tribune building was also placed upon this same type of foundation. Considerable trouble has been experienced in all these buildings owing to the fact that during the placing of the foundations the buildings on adjacent lots settled badly. So long as the water drained out into these wells, the buildings, even on opposite sides of the streets, showed signs of rapid settlement. Steel sheet piling was driven along the alley side of the lot at the Railway Exchange building to obviate this difficulty, but even this did not prove entirely successful.

The new First National Bank building which was recently completed has concrete piers which go to bed rock one hundred eighteen feet below the curb. During the sinking of the wells for these piers the old bank building cracked up so badly as to be in a really dangerous condition.

The new Pope building on Plymouth court near Harrison Street has concrete piers resting on hard-pan eighty-five feet below the street. The adjacent buildings settled so badly that it was necessary to prop them to prevent their falling.

The new Chicago-Edison building, the new Hayworth building and the Republic building have concrete piers. During the construction of the latter the whole of Adams Street adjacent sagged down a foot or more.

It has been fully settled in Chicago after considerable controversy that each property owner must take care of the building on his own property but is not liable for damage to abutting property owners due to excavation or building construction. When a building is contemplated which will in all probability damage the existing buildings on adjacent property, the owner of the proposed building is required to give the abutting property owners thirty days' notice, stating the nature of the improvement anticipated. It is then the duty of those who may be affected to prepare to take care of their own property, and no damage can be collected even though the new building may cause the destruction of the building on adjacent property.

Almost all of the tall buildings in Chicago have foundations of one type which have been considered. There are more buildings with the floating grillage type of foundation than with any other kind, as this was the most natural departure from the old style of foundation. The method of isolated piers, and this improved by the use of steel grillage beams and concrete, was a great step in building construction. This style of foundation has been adopted in all parts of the country and has been used for a large variety of different kinds of construction. In fact the introduction of steel beams into foundations has made possible the construction of many pieces of engineering which would have been impossible under any previous method that had been tried. As was said, this style of foundation was first introduced in building foundation in Chicago; and the majority of modern office buildings in Chicago are resting on spread foundations. But the writer believes the spread foundation has been used in Chicago beyond its legitimate boundary, and that time will prove, if in fact it has not already proved, that this style of foundation is inadequate for a building more than 150 feet high. To substantiate this theory it is significant that none of the tall buildings that have been constructed in the last year, and none of those now under construction, are using the spread foundation. Furthermore in several additions to existing buildings which have spread foundations the concrete pier type is used in the addition.

It is a fact that cannot be concealed that there are a number of leaning towers in Chicago that bid fair to rival the leaning tower of Pisa, if the settlement in one direction does not cease. A phenomenon connected with this leaning of tall buildings is that, as far as the writer has been able to learn, all of these buildings lean toward the east. This may be due to the prevailing west winds which sweep across the level prairies. That this wind pressure is no insignificant item may be realized when it is known, on a building the size of the Masonic Temple, wind blowing at the rate of 80 miles per hour would exert a pressure of 700 tons. This would bring a pressure on the foundations of the east side of the building exceeding those of the west side by a very considerable amount.

It is not probable that any important future office buildings will be placed on spread foundations. One reason for this change is the new law mentioned above which requires each owner to be responsible for the safety of his building regardless of what building operations may be carried on on an adjacent lot. A heavy building on a spread foundation is never in an absolutely safe condition on such soil as underlies Chicago, for at any time some excavation, even at a considerable distance from the building, may permit the soil to escape laterally from under the building and allow it to settle. Another reason is the prospect of a subway being built in the somewhat near future which would open up all sorts of dangerous features. Still another reason why spread foundations are not so popular now as formerly is that at the present time concrete is very much cheaper and with the well developed methods of putting in concrete piers this method of constructing a good foundation is quite economical. Where a million dollars or more is to be expended on a building the small percentage of saving that is made possible by adopting an inferior style of foundation is very questionable economy.

Unless some better method is devised, it is almost certain that the future tall buildings, towers, and similar structures in Chicago will have concrete piers placed on bed rock or piles driven to hard-pan. With either of these methods, little danger need be anticipated from rapid transit tunnels, large sewers or other similar works which may be required with the city's growth. We will not venture an opinion on the permanence of the present office building on spread foundations but will await the final outcome, along with many other anxious watchers who are no doubt as thoroughly interested as we.

SIDNEY J. HARE, landscape artist of Kansas City, is planning improvements for Greenwood cemetery at Knoxville, Tennessee.

AMERICAN STYLE.*

BY TITUS DE BOBULA, ARCHITECT.

LONG, long ago in the past, perhaps millions of aeons ago, at a time beyond human calculation, there was a realm of light wherein resided the spirit of wisdom. His body was like a sun and the living rays emanating from him filled the universe with glory. Matter of a fiery and ethereal kind, such as is unknown to man, filled all space and the light coming from that spirit penetrated the realm of matter and endowed it with life and sensation. Gradually this matter began to cool, centres of attraction were formed, and around these centres still more matter condensed, and they grew into revolving globes, traveling with lightning velocity through space, being guided by the spirit of wisdom. Upon these globes, stones, vegetables, animals and human beings grew. This universal mystery surrounds mankind. The scientists in vain strive to solve it. Only religion or art, with their ideals, will elevate men from the imperfect circumstances, from his wordly battles and pains. They differ inasmuch that while religion, through her mysterious faith of the wonders, sinks to the realms of incomprehensible and therefore cannot express her ideals in material form, true art from the other hand will materialize the formless inexplicable; and even the great wonders will find their natural and necessary expression in works of art. Similar to these two desires is the purpose of science to find truth. But here the goal is unapproachable, and science will always remain incomplete, and as a form indefinite, not knowledge but only the striver being satisfied. On account of these imperfections, science and religion must recede even before the humblest creations of art, as long as they interpret a true artist's ideal. Contemplating the vastness of the nightly sky among brilliant stars there are dim nebulae, either old systems whose life and light is being dispersed or a new ethereal formation around a circle, which in time will have her own suns, planets and moons. Nothing to indicate the exact line between destroyal and new birth, the last moments of the old system being the first of the new one. They are a fitting analegon for similar formations on the horizon of art history, referring to the transition of one world of art to the formless and simultaneously to the phase of an innovation.

These apparitions of the decline of art and the wonderful phoenix birth of a new period from the process of annihilation, is the more significant to us, as to all probabilities we are in just such a crisis where a new style will be born. This assertion does not lack of signs, the only question remaining is, whether they are a result of social decay, or whether they point already to a new healthy formative growth. In other words, whether the development of the human passions is departing from or approaching to nature. Humanity and its three governing ideas, Science, Religion and Art, can be best symbolized by a circle, whose beginning point was nature itself. The development of the human race along this circle departed from the natural beginning point where the simple and yet perfect Adam and Eve understood nature with their instinct thoroughly—until it arrived at the opposite point, where it was most civilized and farthest from nature. From here on it is a return journey towards the natural again, where art will help mankind, not to an instinctive, but a perfect understanding of all the universe. This development of the human race can be applied to art and her periods also, each of which is a perfect circle in itself, governed by the same laws which prevail in the universe. With the same right we can symbolize art by a globe, imagine countless circles, each of them perfect in themselves. Some of them are meridians, some of them diminishing in their size, the nearer they are to an imaginative pole. Each of these circles can represent a certain style or epoch in the history of art. Sometimes they travel parallel, again they intersect each other. Let us imagine that a certain style is nearing its perfection, its beginning and end point where it dissolves in the shapeless and forms the beginning point of an intersecting circle, along which, on similar lines, a new style will travel departing from and approaching again

the natural. According to all signs, as it was pointed out above, we are midst such an innovating birth.

To an architect only the question will remain—is it right that all the mental energy, all the beauty of the past style shall be lost in her perfection, and in reference to progress of mankind, be annihilated forever, and therefore his energy to be used only for the support of a decaying world, and the strength of an Atlas was not sufficient for this—or whether his creative genius will find a more appropriate task in upbuilding from the chaos which nevertheless contains all the mental and artistic energy of the past styles, a re-born ideal of beauty and impulse after perfection. For this purpose the only right way is to seek in the individual cases the law and order which underlies the process of birth and origin of styles, and to establish from these the principal traits of an empirical doctrine of art. The empirical doctrine of art, in other words, the manual of style, is not purely aesthetic, or is not the abstract doctrines of the beautiful. The later ones deal with the forms only as such, and for them beauty is but an assembling of individual forms, for the purpose of a total sphere of activity satisfying our artistic sense. All aesthetical properties of the formed beauty are therefore collective, for instance, Harmony, Proportion, Eurythmy, Symmetry, etc., etc. The doctrine of style however, understands beauty as unity, as a product or result, and not as a total or a succession. In the history of architectural styles, we may call them thus, because all the other arts are depending on architecture, we can distinguish three schools according to the three forms in which sciences are allied with art. They are:

First, the materialistic school under the influence of mathematics and exact sciences.

Second, the historical school under the influence of art, history and antiquarial researches.

Third, the schematic school under the influence of the speculative philosophy.

The materialistic school instructs us how to use the different materials for constructive purposes. She is supported by our present days' practical aims, by the colossal upbuilding of railroads, dams, bridges, etc. Her mistake is in underestimating the idea, making it depending on construction, forgetting that matter is only a tool employed by the idea to create a form.

The historical school, which branches off in countless directions, each fighting the other, strives to copy conscientiously old examples of past styles of foreign nations; instead of, as it would seem more natural, to solve the problem from the premises, as they are given by the present, to solve them with a freedom, not forgetting, however, the laws of aesthetic and the traditional forms, which through thousands and thousands of years remained as incontestable examples and types of certain local and instructive ideas.

The third school is that of the schematic and the Purists. If their philosophy would desire to define ideally the beautiful and limit her in her particular conceptions, next to dissect her to her properties, and if the philosophical mind can finally bring the beautiful to life and define a living doctrine of style, then the aesthetical theme of a purist's faith would be fulfilled. True art in her existing highest form, hates exegesis, takes human life and passions as they are, and from them creates the ideal.

It is true that our intensively practical world might call us dreamers, and designate art not as a necessary sine que non but rather as a detriment to the solving of all the great problems of today, forgetting that all existing things have their origin in the idea; forgetting that art and art alone was the salt which saved the nations from a general downfall. Whenever she was in flower, that was the time when the national life became regenerated and only through supporting and placing art on a pedestal, which is her heirdom, did the nations succeed to rejuvenate and rise to an understanding of their nationalistic importance. Volumes and volumes were written of this theme, and still it is not satisfactorily explained. The time given to write my present paper was not sufficient to give full justice to the task. Instead of explaining all the motive causes, it will be necessary to rely on

* Paper read at the Convention of the Architectural League of America, at Pittsburgh, Pa., April 17, 1905.

authority, and I will pass over the history of the styles only in brief, arriving to the chaos of today.

The comparative philology has proved to us that that language from which most of the ancient and living idioms of the old and new world logically have been derived, is the one which was the most flexible and rich and that the comparative poverty of language, which by many people was designed as the original form, is nothing else than a spontaneous mutilation. After an examination of the Egyptian language, of the hieroglyphics of Assyrian, Hebrew, Peruvian, Swahili, Zulu, Kaffer, Fiji, Arabic, Persian, Sanscrit, Hindustan, Malay, Chinese, New Zealand, Turkish, Greek, Latin, Irish, Welsh, Cornish, Roman, Anglo-Saxon, Icelandic, Esquimaux, Swedish, Danish, German, Dutch, Polish, Romany, Italian, French, English, Spanish and some score of African dialects which embrace all told probably 9-10 of the human race—the whole forms a perfect net-work of connections with each other plainly showing that they have a common origin, their difference being no more than would naturally arise in time between people having surroundings entirely unlike, and developing different mental and physical characteristics. It is an analogon for the language of the art forms. There where we thought to surprise her in her childhood's stammering, she is nothing but the downfall of a formerly existing world of art. For instance, the Patriarchism of the Euphrat Valley is only a broken part of despotism as it existed in a splendid civilization before the time of Abraham. Would it be that the Patriarchism were the original form of society, it ought to show itself everywhere, but this is not the case. There were and there are, for instance, tribes, especially pastoral ones, who despise and condemn the wild powerless old age, who would eat their fathers, as it is related about the wild Herules, and as it is still customary with several tribes of the South Sea. Those pastoral tribes, who today graze their cattle on the ruins of Mesopotamia, know just as little of those olden times where their fore-fathers were united for a mighty nation, as Abraham did. And their tents and corrals can be more appropriately taken for the examples of their present peacelessness and homelessness as for the original types of Oriental architecture. Everything points to the fact that there must have been a mighty and complete civilization before the time to which we arrive with our archeological researches. The civilization of the Nile Valley was transported there from some other region. It is notorious that however far back we go, we find no rude or uncivilized time out of which civilization is developed in Egypt. An Egyptologist remarks that as soon as men were planted on the banks of the Nile, they were already the cleverest men that ever lived, and endowed with more knowledge and more power than their successors could attain to. Says Le Plongeon, the explorer of Yucatan: "The ancient Maya hieratic alphabet discovered by me, is as near alike to the ancient hieratic alphabet of the Egyptians as two alphabets can possibly be, forcing upon us the conclusion that either the Mayas and the Egyptians learned the arts of writing from the same masters, or else that the Egyptians learned it from the Mayas. The legends accompanying the images of several of the Egyptian deities, when interpreted by the Maya language, point directly to them as the birthplace of Egyptian civilization. There is every reason to believe that the cosmological conceptions so widely spread originated with the Mayas, and were communicated by them to all the nations among which we find their name. The supposition is almost justified, says Caithness, ("Mystery of the Ages") that in the Hebrews, and possibly also the Persians, we behold tribes of ancient Atlantis. The terror of the catastrophe that destroyed their continent may have so impressed itself upon their minds hereditarily that the Hebrews' conceptions of God were more inclined to fear than love. It may also have been such an event as to appear like a divine judgment that caused the minds of the ancient Persians to make devils of the Hindu deities (deva, whence devil, signified a divinity) and contrariwise deities of the Hindu devils."

The Book of Genesis opens with the creation of the world by Elohim-Alhein. In the sacred book of the Quiches, Alom is the engenderer, he who gives being. In the Book of Revelations we read of him who is Alpha and Omega. These

are coincidences of a sort which must not be neglected if any considerable portion of the history of the past is ever to be recovered. Coincidences of the same order as the long separated parts of a piece of mechanism, which, when firmly put together again, constitutes a compass to guide our footsteps aright through the bewilderment produced by seeing the Sun of Catholic Christianity turn back ten degrees, or thousands of years, upon the dial of history.

The land of Meru, the same as the Island of Mero (identified by Bryant with Atlantis) of the ancient Egyptians, from which Egypt was first colonized, the Meron of the Greeks, on which the Meropes, the first men, dwelt (ad-am means red clay, as from the pipestones quarry), was the scene where was fought the great battle between the fiends of the air, the heavenly bodies, and the earth, which is the central event of Hindu (Indian) mythology. It has been pertinently suggested that the famed Meru of the Hindus, corresponding to the classic isles of the blest in the western hemisphere, may be derived from America.

"It has long been known that America was once inhabited by a mighty population who operated copper mines, were skilled engineers, and left evidence of their arts and their commercial and political greatness in various other parts of the globe. In making excavations on Long Island, coins have been found whose inscriptions are in characters unknown in history. What became of the great multitude of the ancient Americans? Did they slowly retire from the continent on account of severe climatic changes, or were they blotted out of existence by a colossal catastrophe? The answer of the drift-covered forests and the animal remains found buried beneath from fifty to one hundred feet of non-fossiliferous clay and gravel is unequivocal. They were basking in the sunshine and were at the height of political and military greatness, dreaded by all Europe and Africa; when, lo, in the evening, terror! and before morning they were not! "This," sang the people who dwelt under the sign of Aries, "is the portion of our spoilers. The spoilers of Ariel vanished like a dream!"

The investigations of Dawson, Geikie, Winchell, and others "place it beyond question that the drift came suddenly upon the world, slaughtering the animals, and smashing, pounding, and contorting the surface of the earth. The deposit of these continental masses of clay, sand and gravel was but one of the features of the appalling event. The Drift marks probably the most awful convulsion and catastrophe that has ever fallen upon our globe. It was sudden and overwhelming. It fell upon land-areas much like our own in geographical conformation; forest covered, inhabited; glorious lands, basking in perpetual summer, in the midst of a golden age."

This little side step into ancient speculative history will show us that besides the supposed positive statements of some historians, an open field remains for the imagination to trace the ancient origin of mankind, and therefore, their civilization before the great catastrophe—as mentioned in all the sacred books of all nations—to America. With this supposition, which will justify our faith in the future fate and growth of our nation, we will deal later. For the present it ought to suffice that no matter how far we go into archeological researches of the last centuries, we cannot find the original birthplace of mankind, but have to deal in the field of art history only with those fragmentary remnants which present excavations gave us as types of ancient styles. Those tribes who wandered from Asia to Europe all traveled with reminiscences of an earlier civilization. This remembrance shows itself as the least extinguished with those Indo-German tribes, which settled in southern Europe, Japygians, Etrusks, and Greco-Italians. In the north and west the Finns are on the boundary of history. The rich idiom of the Finns and the still existing remnants of a very perfect poetry give us proofs that their condition could have been mutilated, but by no means could it have been originally wild. The Kelts came after them pressing themselves to the outside portions of Europe, where they degenerated from an agricultural life to that of fishing and hunting. They were too, the peaceless exiles of a social body. They were followed by the Germans who knew and used iron. These German hords too, without national connections but with a mutual language connected

with each other, were from society exiled homeless wanderers. Finns, Kelts, Germans, Slavs, Scandinavians, they all have brought with them to the west reminiscences, education and appropriate traditions of architecture, which mightily co-operated in the transformation of society after the fall of Rome, as active elements of the new social order and necessarily of the new born art.

The archeological excavations in Asia will bring us as the oldest civilization, that of the Hindus. They were followed by the Assyrians, and later on by the Egyptians, which Egyptian civilization however must have received an impulse from the west too. Very probably from those wanderers, who were frightened by the mighty catastrophe, which dissected America from Europe and caused the downfall and annihilation of the original civilization of Merod. It is only one step to deduct from the Egyptian and Assyrian style, that of the Greeks, which style, up to the present day, approached nearest to the aesthetically ideal. The remains of temples in Paestum will show us the Greco-Italian art from which the Romans derived their style. The difference between the two styles confronts us, that while the Greeks proceeded to clothe their constructive elements to such an extent that in the contemplation of their buildings, we are not disturbed with the knowledge of any construction at all, but construction and decorative elements work as a harmonious unit, giving us a form which interprets the nation's impulse after the ideally perfect, from the other hand in the Roman style the military empire creating impulse of the nation brings the constructive element to the surface and disturbs the quiet joy of the spectator.

As an instance, I will only relate that the Greeks knew the construction and application of arches and walls and threw them away as a too much constructive element in their style, which consisted of horizontal lines, and the lack of the upright direction of an arch gives the appearance of monumentalism to all of their buildings. They were not working with such colossal dimensions as the Romans and, for their eyes, only the horizontal lines which were parallel with the ground surface were the most appropriate expressions of monumentality. How far advanced they were even above the later centuries is shown in the fact that even today their buildings will impress us as more monumental than the best and most completed creations of the Roman and Gothic styles.

While the seed of civilization was spreading from the east to the west—the decaying Roman empire, giving its mental treasure to the Franks, Spain and England—"from the north came the destruction." The wandering tribes who were hardened by the hardships of exile, destroyed with their hordes the over-civilized empire, but in exchange for the healthy and natural blood with which they inoculated the decaying civilization, they received some of the same higher ideals and took them back into their own country and from here we can date the Romanesque and Gothic styles. From the ruins of the Roman Empire after a stagnation which lasted for centuries, in the era where the Christian empire of the venerable Church of Rome became the mistress of all the civilized nations, we see bloom the rejuvenated antique arts of the cinque centos humanisms and the so-called Renaissance independently from the purely Romanesque and Gothic directions of the north. This Renaissance, which today is used with such an extensive liberty as excuses for several pamperings in style, unluckily for her feeding only on crumbs of antique remains, could not develop herself to such a bloom as did her northern sister, the Gothic style, with the exception of a few buildings, where the creative genius of Michael Angelo, Buonarrotti, or a Bramante, carried out perfect specimens in themselves, which cannot, however, be taken as representatives of the style, just as well as the *ca' d'oro* can only be taken as the perfect work of an artist's dream but not the specimen of a nation's style. The Romanesque remained unfinished. The devastation of Italy served only to transplant the ideas to farther countries. During this time in the north the constructive Gothic style developed herself to the fullest perfection in the Dome of Cologne. It was a conscientious, logical and mathematical covering of the constructional units to such an extent that finally there was

nothing more to be covered and the Gothic style was perfection herself and improvement on her was impossible. It is only natural that the same Gothic style should find her supporters in France and even in Italy; luckily, however, even the decaying Renaissance proved herself such a strong antagonist that the Italian Gothic had to stop. In Europe, not taking into consideration the Byzantine style which traveled eastward, the Gothic and the Renaissance have been imagined to develop parallel. We find the German Renaissance, Holland Renaissance, English Renaissance, Polish, Austrian, Hungarian Renaissance and all kinds of Renaissance. From the other hand there is the French, Italian, Spanish, English, Scandinavian and even Russian and Hungarian Gothic. What was the result of this so-called development? In 1870 we find a man, Gottfried Semper, whose genius recognizes the futility of copying, and he is the first who with prophetic foresight tells us that this chaos is the sign of decaying and confused social circumstances and the necessarily healthier and more creative spirit must prevail in the formation of new styles. At that time the new Gothic direction which first was inspired by Goethe and the romantic poets tried to find footing. Its best examples are the two Gothic towers tendency, although not universally recognized must naturally have drifted from the national to the cosmopolitan. The best example for this is the question of wearing apparel.

Today all civilized nations will follow the same style in their clothing; essentially an Englishman will wear the same clothes as a Frenchman, German, or American, and the difference among them is not in the essence but only in the geographical conditions.

All Europe today, with the exception of the wise flag-bearers of a new era, among whom Otto Wagner, can be mentioned, tries to form a national style, not knowing that all their mental energy is only the foundation to the cosmopolitan style, in which style there will be only different directions with geographical characteristics. Van de Velde in Belgium although supporting the Belgian arts in his works, is purely cosmopolitan. His works, however, will show a purely Belgian trait. His buildings are at home in Belgium and would be no where else. The Parisian Renaissance—because all France is united in Paris, and the French style is best characterized by the word "Parisian"—reached its highest specimen in the Grand Opera and from there on it became the example for many and many copies which all have a cosmopolitan trait. Those Parisian buildings, sorry to observe, find their copies in Holland, Scandinavia, Russia, Hungary, Switzerland, Italy, Spain, South America, and, walking along Fifth Avenue and the upper 90th streets of New York, we will think ourselves in Paris if other, they say, insignificant, but nevertheless intensive and important American circumstances would not shock the thinking observer that we as a mighty nation shall sink to that step of deprivation where our artists cannot find an impulsive idea in our own land, but must copy the creations of strange nations.

Those national styles of Europe all contain the common base of the antique. Even in England the most important buildings are not built in the Gothic but in the so-called English Renaissance. The styles of Spain today is only a revival of the antique. The naturalistic treatments of Otto Reit in Germany applied to classical buildings. Switzerland, Austria, Scandinavia, the English Colonies, South America, all have the most important buildings built in a style of which the classical is the base, yet characterized by specially nationalistic treatments. Only we poor North Americans, we who are today the mightiest commercial factor in the household of the nations, only we must copy, copy, I repeat, our buildings either conscientiously after the antique or after art nouveau, beaux art, modern English, Knickerbocker, etc., etc., styles.

In all sciences wonderful is the American creative genius. Only architecture cannot find her supporters. The craze after wealth is killing every artistic feeling, depraving and poisoning our public which is not able, not mature enough to support and appreciate an American movement in architecture. In America we cannot find yet a right appreciation of art.

(To be continued.)

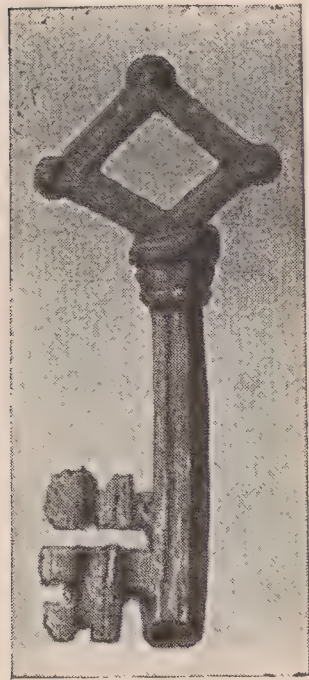
LOCKS AND HARDWARE—HISTORICAL.* (Continued.)

“THE Egyptians, however, appear to have at an early date applied also brass and iron to the construction of locks and keys. Wilkinson, in his ‘Manners and Customs of the Ancient Egyptians,’ describes a key made of iron, which he found in the ruins of Thebes, and which had a shank five inches long, the handle being made by a loop at one end, while the other was turned at a right angle to form the operative part of the key, which was furnished with three teeth or points, to fit into corresponding cavities in the lock.

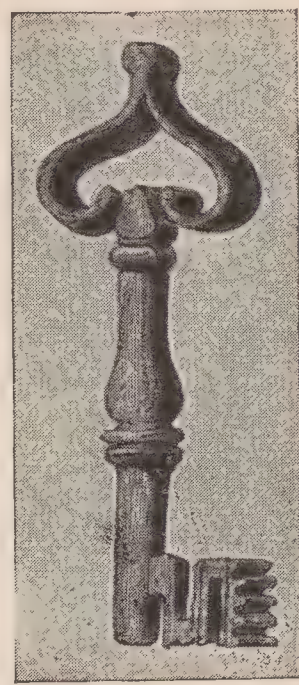
“We learn from Mr. Parkhurst’s ‘Hebrew Lexicon,’ as quoted by Mr. Chubb and by Mr. Price, that certain crooked keys, having ivory or wooden handles, were used by the Hebrews and by the Greeks for the purpose of bolting or unbolting locks. Yet, before the Greeks knew anything about iron keys and locks, they fastened their doors and cabinets in a peculiar way, of which there is no record of its having ever been used by other nations. They fastened them with knots very difficult to be untied by any one but the person who had made them. In the eighth book of the ‘Odyssey,’ Ulysses is represented securing the rich presents of Alcinous and his queen, by a cord or rope fastened in a knot ‘closed with Circean art.’ This knot of Ulysses became a proverb to express an insoluble difficulty, and the Gordian knot is a proof of the estimation in which the ancients held this art, so necessary in the absence of locks.

“The locks that modern Greeks still use, particularly in the mountains, where so many of the ancient customs and traditions are preserved, seem to point to another equally primitive manner of fastening doors. These were closed from inside by a bar, either of wood or of metal, attached to the door by means of leather strings or small iron chains. The keys by which these bolts were lifted up were made in the shape of hooks or sickles, either of wood or iron. So simple were these contrivances that any hook could open nearly every door; thus the Greeks had no difficulties in robbing each other. It is easily imagined that such a state of things could not last long; and the Greek ingenuity, that was never amiss, soon provided better for the security of property. The so-called Lacedæmonian lock was invented. When Pliny and Virgil speak of Theodorus of Samos as the inventor of locks and keys, it is perhaps in reference to the Lacedæmonian lock that their words possess a certain amount of historical truth. In time this specimen of fastening was improved by the insertion of the bolt in an iron frame or rim, which was permanently attached to the door by a small chain; but such a confusion is made by all the writers in describing the manner in which this lock worked, that we have been actually unable to find out what they meant.

“Keys seem not to have been reduced in size by the Greeks. Homer tells us (‘Odyssey,’ xxi) that Penelope, wanting to open a wardrobe, took a brass key very crooked and hafted with ivory. On this passage Eustathius, the Greek commentator of the ‘Sovereign Poet,’ remarks that this kind of key was very ancient, and different from the keys having several wards, which have been invented since, but that they were in use even in his own time (1170). They were in the shape of sickles, and, not being easily carried in the hand on account of their size and inconvenient form, they were usually carried according to the Egyptian style. Callimachus, in his hymn to Ceres, says that the goddess having assumed the form of Nicippe, the priestess, carried a key fit to be borne on the shoulder. That keys with a kind of ringed handle were



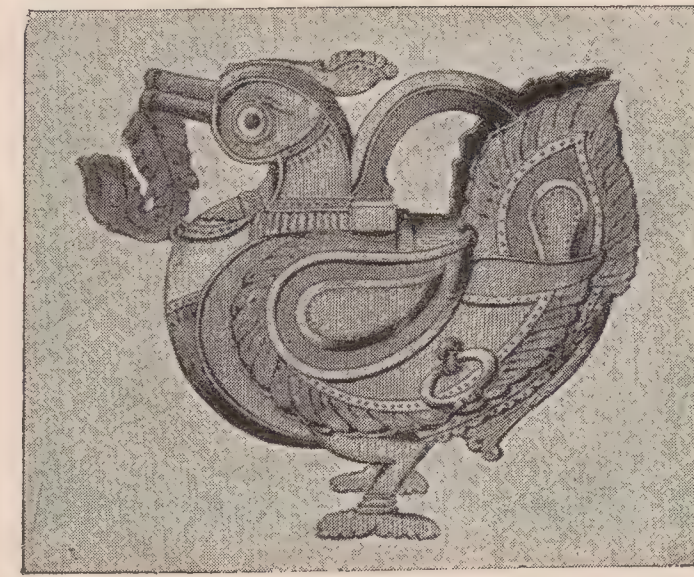
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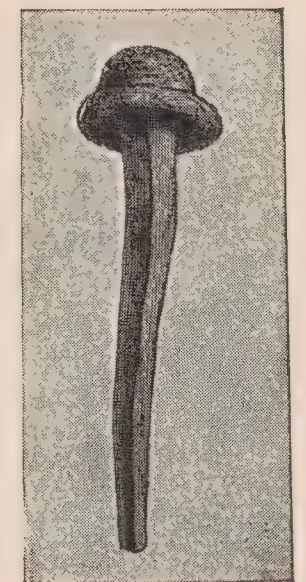
No 11

known to the Greeks, is further proved by a passage of Aratus. In order to give his readers an idea of the figure of the constellation Cassiopeia, he compares it to a key, and Huetius states that the constellation answers indeed to such a description, the stars to the north composing the curved part, and those to the south the handle.

“Among the nations of antiquity lock-making made little progress in advance of what had been done by the Egyptians. Even the Romans, who excelled the other nations in iron-work, used very simple locks, which resembled those of the modern Greeks. For a long time these contrivances were not nailed to the doors, and to open them it was sufficient to insert a jack into the staple and shake it; hence Ovid wrote, ‘Escute forte seram’ (‘Shake the lock hard’). Varro and Nonius also speak of this kind of locks as being mere padlocks. In the excavations executed in 1853 at Pompeii, in presence of the Imperial Princess of Russia, were, however, found a number of locks and keys which are improvements on anything previously made, as will be seen in our cuts Nos. 5, 6, 7, 8 and 9. The simple construction of No. 5 announces its greater antiquity; the bolt is of brass and was evidently intended to move up and down a staple, on the lever principle, and to close by falling in a hasp fixed in the frame of the door. No. 6 marks a step further in the art of lock-making. It is an iron padlock with a brass handle, very much corroded by age; the frame presents some attempts at carving, and is covered by a beautiful *vert-de-gris*. No. 7 is typical of a further improvement. It is no longer a padlock—it is a real lock, nailed to the boards of the door, pieces of which are still connected with the former. The bolt inside is also of hammered iron, and so is the key; applied to this bolt is what I would call ‘the embryo of a spring,’ the oldest token we have of this accessory. This lock is ornamented outside with ten brass nails, the four at the corners passing through the lock and the boards of the door, on the other side of which they are riveted. The key shown by our illustration No. 8 bespeaks that elegance which later on was to distinguish iron-works of all kinds; human ingenuity, by this time, does not satisfy itself with making contrivances to secure property; it devises ornaments for them, and endeavors to introduce such a variety in key and lock making as to render it more difficult to open locks with any other than the proper key. This specimen of key has in fact a square hole, and the surface of its shank is inlaid with silver. The house in which these and other contrivances were found seems to have been that of a locksmith. No. 9 is a faithful facsimile of an iron jack probably used by the professional man to catch all kinds of bolts, and open doors whose keys were lost. The ornaments on the handle are of brass, and show refined workmanship. The existence of these objects seems to have been utterly ignored by all writers on the subject, as we nowhere find them mentioned, yet they are to be seen in the Imperial Museum at St. Petersburg.

No. 12
HINDOO LOCK.

“Next in antiquity come the warded locks in ordinary use. Whence these had their origin is unknown; they seem, however, to have been used by the Etruscans, as rude specimens of them have been found in the excavations opened on the sites where the cities of Luni and Populonia arose 3,000 years ago. In the Etruscan Museum of Volterra, a wonderful collection very little known abroad, there are some locks of this description which seem, however, to have never fallen under the observation of writers on iron-works. Though our researches have been diligent, we have failed to find that any but a few of the most important objects belonging to this collection have ever been illustrated, and we are therefore unable to furnish engravings of the specimens mentioned above.” (To be continued.)



No 13

*An article forming part of “A Treatise on Locks and Builders’ Hardware,” by Henry R. Towne, president of the Yale & Towne Mfg. Co., and past president of the American Society of Mechanical Engineers. John Wiley & Sons, publishers. Price, \$3.00. It is the intention of the publishers of the INLAND ARCHITECT to publish other selections from this work. The book is profusely illustrated and contains more than 1,100 pages, 4x6½ inches.

***For all mechanical explanations that may be found in this sketch, we are indebted to the kindness of Mr. Frederick Vors.

HOLLAND ARCHITECTURE.*

BY GEORGE W. MAHER, ARCHITECT.

The architecture of Holland is interesting principally on account of its freedom from conventionality. Except in the domain of originality in painting, for which she is justly famous, Holland has never manifested preeminent creative artistic endowments. Its architecture is cosmopolitan in character. While borrowing features from various countries, its work nevertheless bears a stamp of originality, reflective of a strong national character.

One must take into consideration the underlying qualities belonging to the Holland people and their civilization. A people who have so persistently striven against great odds, who have succeeded in conquering the sea and making a drear environment of morass and swamp blossom into a fruitful land, surely must evolve ideas of incalculable worth. Individuality and independence are its heritage and its democracy has influenced the world at large.

Their general type of architecture, unlike that found in Greece and Italy, is inharmonious and untrammelled in its freedom. Academic rule and following tenaciously an established precedent, find little encouragement in Holland. The employment of the sister arts, sculpture and painting, in the embellishment of their buildings, is seldom attempted in a large way. The majesty, proportion and grandeur of conception seen in the architecture of other European countries is here wanting.

To recognize the influence of style in any country, one must know something of architecture in general, as well as certain distinct features in particular. Therefore before considering our subject further, and in order that it may be more intelligible, let us review briefly those great styles in other countries, which were borrowed by Holland and have had much to do in fashioning her architecture.

The Gothic and The Renaissance styles must therefore be considered, for it was from them that Holland drew much of her inspiration. We are acquainted with the Gothic from its association and use in ecclesiastical architecture. This style evolved in northern Europe, and as fully developed in church and cathedral, represents a most exalted conception of nature and mysticism, where emotion and not intellect is the moving incentive.

The distinct features of the Gothic are the perpendicular line, the pointed arch, the groined nave and lofty spires. In strong contrast to the Gothic style is the Greek architecture, which is the foundation of the classic and the Renaissance. Here the intellect comes fully into play and art is reduced to a scientific basis.

It is in this style that all the arts, painting, sculpture and finish of workmanship, combine in harmonious unison, to lend grace and beauty to column, entablature and pediment. Here is used the horizontal line, which finds its counterpart in nature, in the horizon, a God-given visible line, ever equal to our vision and broadening as we evolve higher. The classical architecture is therefore of the mind and is in tune with the universe.

The Gothic, as we know, is a medieval architecture developed in the dark ages of Europe. While the Renaissance represents the revival of the classic, through the study of Roman architecture, which was a direct inspiration from the Greek. Each country of Europe has had its own interpretation of the classic, resulting in the Italian, the French and the German Renaissance, and so on.

Holland made use of the Gothic and Renaissance, deriving her Gothic from France and Germany, her near neighbors, employing it principally in her ecclesiastical buildings, and adopting these foreign models and in all probability calling upon foreign architects to lend their assistance in erecting them.

The interior of these churches were originally rich in works of art, but at the present time are pronounced cold and bare, due to the misdirected zeal of the religious fanaticism of the reformation, which utterly destroyed every symbolism of Roman Catholic origin. However, we may admire the struggle for liberty and religious freedom on the part of the Protestants of Europe, there was never a just cause for destroying one single work of art, whether architecture, sculpture or painting. Is it not to the credit of the Roman Catholic church in the dark ages of illiteracy, that through her fostering care and protection, ancient usages, art and literature were preserved to be perpetuated and to enrich the civilization of the modern world. But Holland, goaded on by the atrocities of Phillip II, evinced no desire to perpetuate anything Catholic or akin to Spain and therefore we are unable to elaborate upon the church interiors. I wish to quote you a description of one of the present church interiors of Rotterdam, by an Italian writer.

"Near the market square stands the cathedral which was founded toward the end of the fifteenth century, at the time of the decadence of Gothic architecture. It was then a Catholic church consecrated to St. Lawrence; now it is the first Protestant church in the city. Protestantism with religious vandalism entered the ancient church with a pickaxe

and a white wash brush, and with bigoted fanaticism broke, scraped, rasped, plastered, and destroyed all that was beautiful and splendid, and reduced it to a bare white cold edifice, such as ought to have been devoted to the goddess of Ennui in the time of the "false and lying gods." This was the first Protestant church I had entered and I must confess I felt a disagreeable sensation, partly of sadness and partly of scandal. I compared the dismantled appearance of this church with the magnificent cathedrals of Italy and Spain where a soft and mysterious light shines from the walls, and where one meets the loving looks of angels and saints through the clouds of incense directing one's gaze toward heaven; where one sees so many pictures of innocence that calm one, so many images of pain that help one to suffer, that inspires one with resignation, peace, and the sweetness of pardon; where the poor without food or shelter, spurned from the rich man's gate, may pray amid marble and gold as if in a palace; where surrounded by pomp and splendor they do not humiliate but rather honor and comfort their misery; they are not despised."

Naturally enough an Italian can scarcely appreciate a Protestant's point of view, since his idea of a place of worship is that it should contain all that is beautiful and of assistance to his devotional worship. And should not this view-point be respected, for it embodies much that is noble and to certain natures, satisfying?

I well remember my first impressions of that wonderful cathedral of San Marco at Venice. As one enters the spacious portals and views for the first time the richness of the interior, where there seems to reflect in harmonious colors, a spiritual light from the golden domed vaults overhead; portraying on all sides and above, enduring pictures in beautiful mosaics, illustrative of great events in Biblical history. Here the most ignorant, as well as the most enlightened may come and be inspired to worship, according to their own faith and convictions. I have little sympathy for inartistic, inharmonious or incongruous places of worship. Art and religion should ever be associated together. Art is but a feeble attempt on the part of man to bring him into harmony with the Unseen with the unfathomable spiritual mystery that pervades all life. Art is to the senses what religion is to the soul. But it must be a universal art. Symbolism as employed by the past church, fills only a part of art's true mission, for art is free and when animated by the religion of truth, towards which we are aspiring, will fill our future places of worship with a natural, rational art as perfect as the sunlight of day and as mystically beautiful as the moonlit heavens of the night.

But to return to Holland, we find that the Renaissance style is more often used in preference to the Gothic, as direct lines and plain surfaces seem more in keeping with the simple character of the people. They have individualized this style and have given it a spirit peculiar to themselves. To be sure the Gothic influence is felt in many of these Renaissance facades and lends a peculiar interest to the architecture of the cities.

The picturesque variety of masses and skyline inherited from medieval times, appears in high roofs, stepped gables and lofty dormers. The roofs often comprise several stories and are lighted by lofty gables at either end, and by dormers carried up from the side walls through two or three stories. Gables and dormers alike are built in diminishing stages. Each step adorned with console or scroll and the whole treated oftentimes with pilasters or colonnettes and entablatures breaking over each support. These roofs, dormers and gables contribute the most noticeable element to the general effect of the Holland Renaissance and are commonly the best designed features in them. The orders are scantily used and usually treated with utter disregard of classic proportions.

It will thus be seen as I have stated that the freedom from conventionality is the Holland characteristic and that the Gothic and Renaissance influences were turned aside and partially neutralized by the stronger feeling of domesticity. Perhaps the most characteristic feature of their architecture are the long rows of private dwellings, with high gables facing the street.

The public buildings in many instances are designed on precisely the same lines as the private dwellings. The material used in the construction is principally brick, inasmuch as stone is a scarcity in Holland.

These brick are laid in various bonds, the principal one being the well known Flemish bond. There are many lessons here to be learned by the student, principally that of suiting the architecture to the needs of the people, irrespective of classic canon.

The Dutch temperament could hardly originate an architectural movement such as produced by the Greeks, nor had it enthusiasm sufficient to participate in developing the great medieval style. Therefore the Dutch borrowed from the Greek and the Gothic after these styles had been perfected.

It is in the realm of democracy of art that Holland teaches the student the greatest lesson. Individuality of action is the keynote and, while the fruition of this principle as applied to architecture is not exemplified in Holland, there is nevertheless at present a strong movement that indicates her interest in the new art upheaval now prevalent—commonly called the "Art Nouveau."

*Paper read before the "Kenilworth Travel Club."

Indeed this independence of idea, or liberty, seems to be at the root of our own architectural progress. So, even though we may at present erect bank buildings that resemble improvised Greek temples, build churches and universities in imitation of medievalism, and residences like Italian villas and French chateaux, in time a style will evolve from all this chaos, that will blend into a universality of effect, appealing to both the scientific and the mystic natures alike.

Towards this great movement, Holland has unmistakably contributed her portion of influence, and this spirit of natural living and thinking will direct the architecture of succeeding generations.

OUR ILLUSTRATIONS.

El Detora Apartment Building, Kansas City, Mo.; Albert Turney, architect.

Interior view Security Savings Bank, Herman W. Hellman Building, Los Angeles, Cal.; A. F. Rosenheim, architect.

Residence of Mrs. Fred Maiers, Los Angeles, Cal.; John P. Krempel, architect. Exterior and interior views are shown.

Kirkland B. Armour Memorial Chapel, Elmwood Cemetery, Kansas City, Mo.; Marshall & Fox, architects, Chicago.

Wendell Phillips High School, Chicago; Wm. B. Mundie, architect.

Residence of Geo. M. Myers, Kansas City, Mo. Shepard & Farrar, architects. An exterior view and view in dining room are shown. See advertising page IV.

Group of residences for professors of University of Chicago, Chicago; Mann, Mac Neille & Lindeberg, architects, New York and Chicago. In this group of houses a unique and successful effort has been made at cooperative building. While each house has been planned to suit the needs of the family which occupies it, the group as a whole forms a harmonious ensemble, unusual in four distinct and separate residences. The houses are not on the same building line, some being placed further back on the lot than others, in order that the greatest amount of light and air could be obtained for each. A very flexible English domestic style of architecture has been chosen in order that the individual preferences of each family might be considered in every particular. In the first two houses, the English plan as well as exterior, has been followed, and the living rooms and piazzas placed in the rear, facing the garden, while the dining rooms and kitchens are in front. The owner of the fourth house, being a director of music in the University, has given primary importance to a very large music room, where his musicales will be held.

The following views are shown of the new Minnesota Capitol building: Interior view, main entrance, main floor; grand stairway, west, looking toward Senate chamber; entrance to Supreme Court, showing part of stairway at east; view in Supreme Court room; Senate retiring room; House retiring room; Two of the four granite pillars on second floor.

SPECIAL PLATES.

The new Minnesota Capitol Building, St. Paul, Minn. Eight full-page views are given, presenting views as follows: General exterior view, main front; detail of main front, central portion with dome; detail over main front entrance; general exterior rear view; view in rotunda, second floor, looking toward entrance to Senate chamber; view in Senate chamber; view in House; view in Governor's reception room.

NEW PUBLICATIONS.

PROPERTIES OF STEEL SECTIONS, a reference book for structural engineers and architects, including tables of inertia and radii of gyration of built sections, examples of sections selected from monumental structures, unit stresses, safe loads for columns, plate girder design, design in timber, etc., with only sufficient text to explain their application. By John C. Sample, C. E. M. Arch., Architectural Engineer, New York; McGraw Publishing Company, New York, 1905. Price \$3.00.

This is essentially a book of tables and diagrams of steel details and sections and is not intended as a text on design in steel but rather a handy reference book showing such sections as are in use, with tables which aim to give such qualities as will give to the designer such sections as will meet with his general requirements, thus saving the energy ordinarily spent in preliminary figuring. The aim seems to be to do this and cover the field of steel construction without adding unnecessary detail, it not being considered within the scope of the book to include subjects evolved from a theoretical standpoint, all values having been checked and calculated independently and are claimed by the author to be practically correct. The illustrations of sections of columns used in a considerable number of the large steel office structures in the United States, particularly in Chicago and New York are exceedingly valuable as they show the column used in common practice, a general form, (although the author does not say so) advocated by Mr. Perry of the Carnegie Steel Company. The list also includes a number of bridge columns of the most recent date. In fact, the book brings the practice down to the present and it is the avowed design of the author to revise the work from time to time as changes and improvements in the design of steel construction may demand. A chapter is given to unit strains under dynamic loads which is taken from the bulletin of the American

Railway Engineering and Maintenance of Way Association, which also goes into the subject of unit strains in compression members. The loading of plate girders also receives attention and treats of design and uniform and concentrated loading as well as resistance of web plate to bending stress. The strength of columns, beams and flooring, is also given in the report of a committee of the American Structural Association of Railway Superintendents of Bridges and Buildings on "strength of bridge and trestle timbers," which goes into the subject of timber with the same attention to detail. As a whole the work is a simple and practical compilation of the many problems in steel and wood construction relating to bearing strains and moving loads and as such must prove of great benefit to every architect, in the designing of steel structures or mill construction, as the author has aimed to confine himself to those sections only which are necessary to stable design, and illustrates such as are commonly carried in stock by most large structural steel plants.

STRUCTURAL DESIGNERS' HAND BOOK, giving diagrams and tables for the design of beams, girders and columns with calculations based on the New York city building code. By William Fry Scott, structural engineer A. S. T. M. The Engineering News Publishing Co., New York.

This is a hand book prepared for the expert designer and is a diagrammatic treatise on structural design. It gives among other valuable matter a full tabulation of the properties of market slopes of material and is designed as a valuable assistant in eliminating much of drudgery of computation which is necessary to structural designing. The New York building code has been followed throughout.

ASSOCIATION NOTES.

NEW JERSEY STATE BOARD OF ARCHITECTS.

The second annual report of the New Jersey State Board of Architects, which treats of the work done by the board during 1904, has just been issued. Up to the time the annual report was prepared 665 architects had taken out New Jersey licenses. Newark leads, with 95 registered architects, Plainfield has 6 and Westfield 2.

The second annual report of the New Jersey State Board of Architects notes that two omissions in the law had given considerable embarrassment. These were the omission of a definition of what legally constituted the practice of architecture, and the other the omission of a fixed time limit when the right to apply for certificates without examination should express.

CINCINNATI CHAPTER A. I. A.

The Cincinnati Chapter of the American Institute, one of the oldest, if not the oldest Chapter of the Institute, celebrated its thirty-fifth anniversary Feb. 20. The only living charter members, James W. McLaughlin and Samuel Hannaford, were present, and the guests of honor. The general subject of Municipal Improvement was discussed and a report upon the Institute convention received.

THE ST. LOUIS ARCHITECTURAL CLUB.

The last regular meeting of the club was held in the new club rooms in the Dolph Building Saturday evening, June 10th, and the dramatic entertainment committee entertained the club with a one-act sketch. The officers of the club for the year 1905 are John C. Stephens, president; W. T. Trueblood, first vice-president; W. Oscar Mullgardt, second vice-president; E. L. Pleitsch, secretary; N. O. Vegely, treasurer; J. N. Watson and William B. Ittner, advisory board.

MILWAUKEE ARCHITECTURAL CLUB.

The club has rooms in the building of the Builders' Club. The membership numbers ninety-one. The regular meeting is always preceded by a supper given by the club at 6:30 p. m. Meeting is called to order at 8 p. m.; average attendance, twenty-two. Occasionally papers are read and discussed. Within the past few years the club has worked hard for the passage of a State Architects' License Bill, but as yet without success. No meetings are held in June, July, August and September. A sketch class, consisting mostly of junior members, was formed some months ago. This class is in charge of a practicing architect. The class meets at 5 p. m. the day of the regular monthly meeting, and is given a problem to work out. Sketches must be delivered by 6:30 p. m. These sketches are then worked up and handed in at the next monthly meeting, when they are judged by a committee of three appointed by the chairman, and first, second and third mentions awarded. The board of directors consist of the president, vice-president, treasurer and secretary and three other directors, seven in all. The present officers are: Cornelius Leenhouts, president; Herman U. Bueming, vice-president; Henry J. Rotier, treasurer; Edwin O. Kuenzli, secretary; directors: George B. Ferry, H. P. Schnetzky, T. L. Rose.

ACCORDING to reports from New York, art has adopted a fourth estate. A "Four Arts" ball was given by the Art Students League at which the representatives of painting, sculpture and architecture met theatrical art and probably danced to the tune of "Stoffa de Italiano" in a ball room decorated in L'Art Nouveau.

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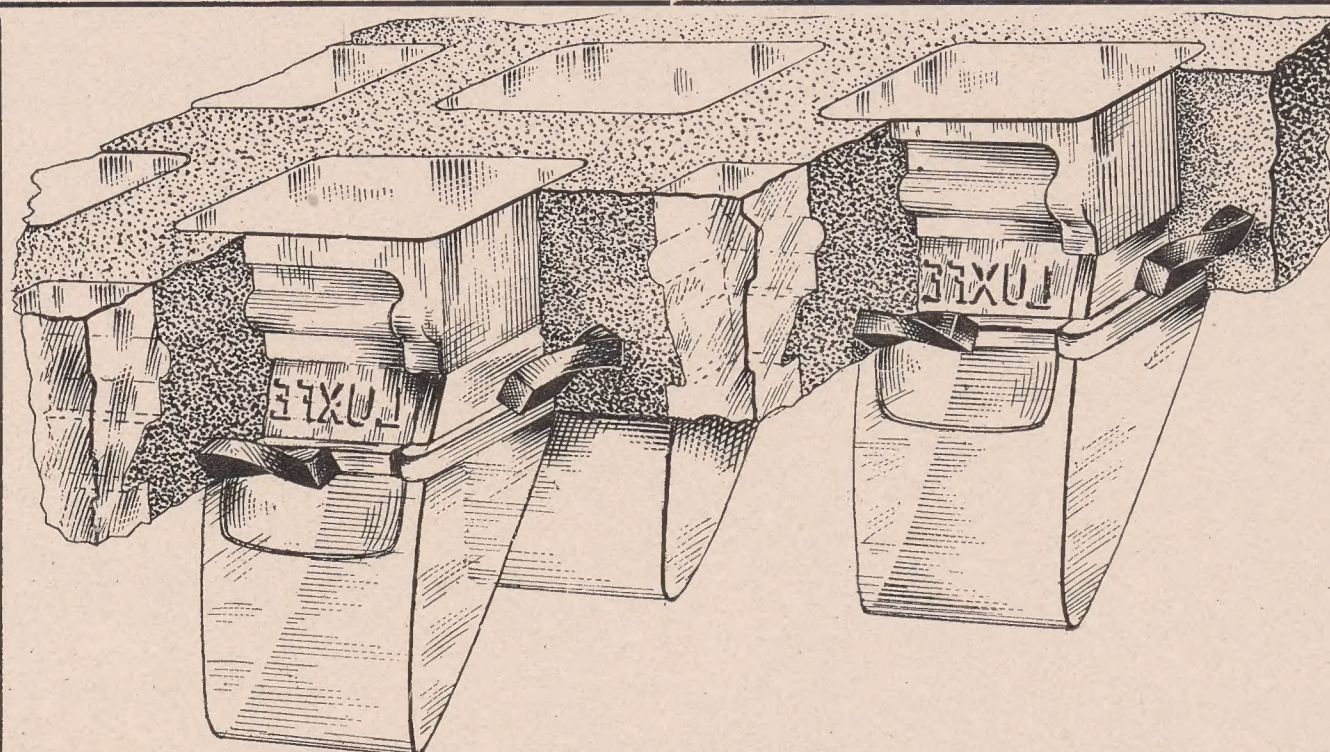
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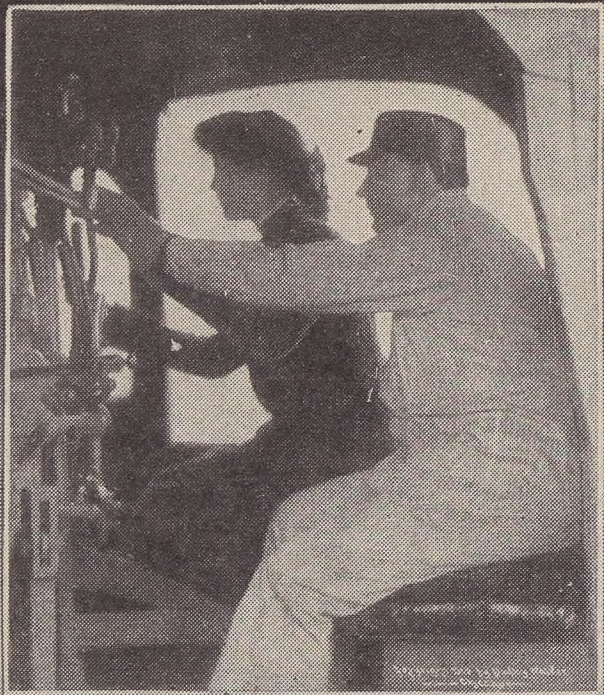
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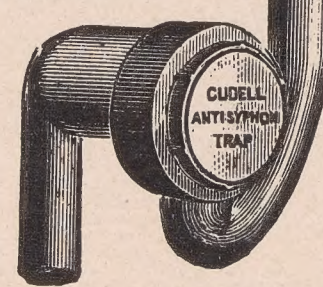
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